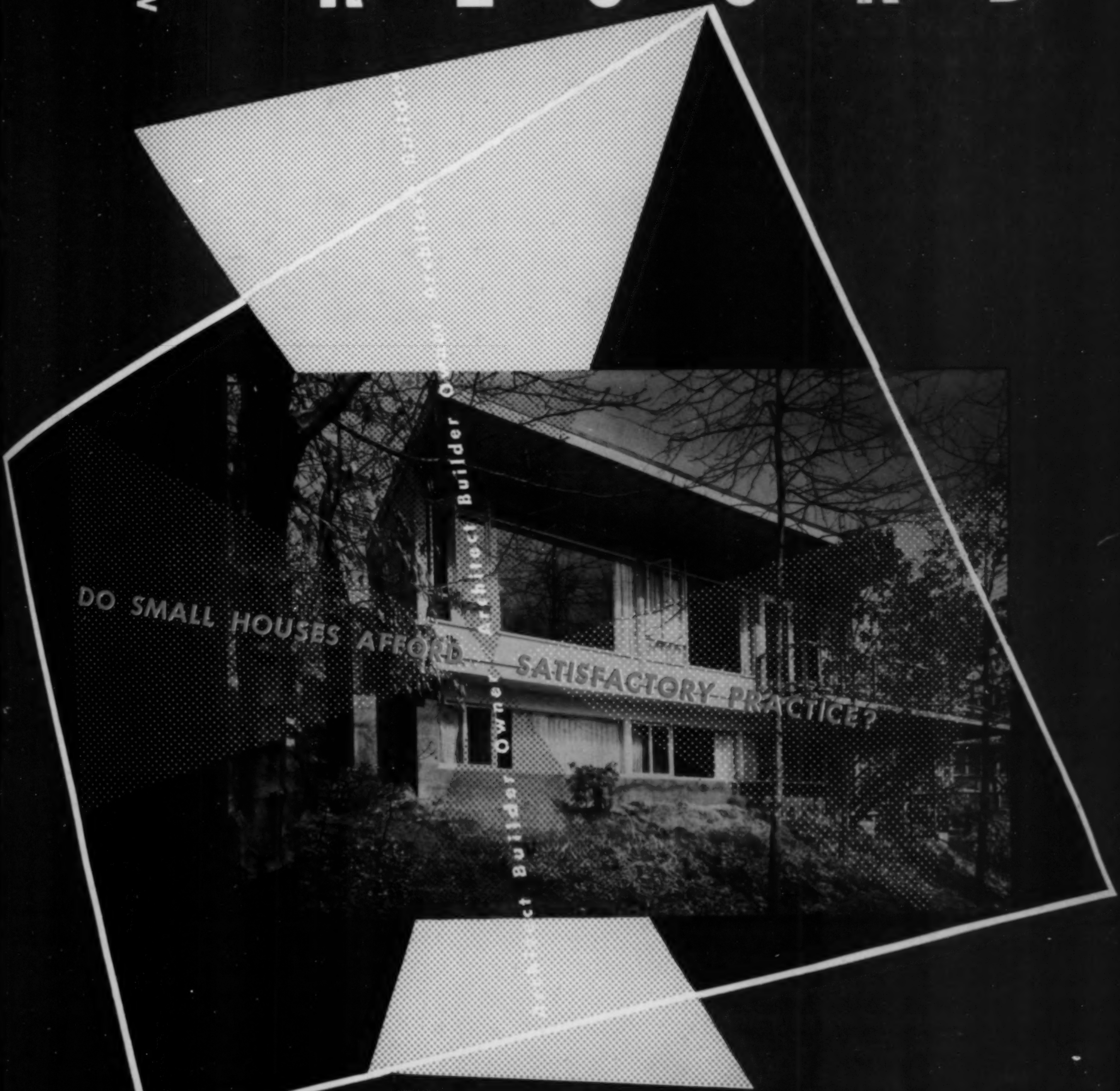
ARCHITECTURAL RECORD

MAY 1950



DO SMALL HOUSES AFFORD SATISFACTORY PRACTICE?

Owner Architect Builder
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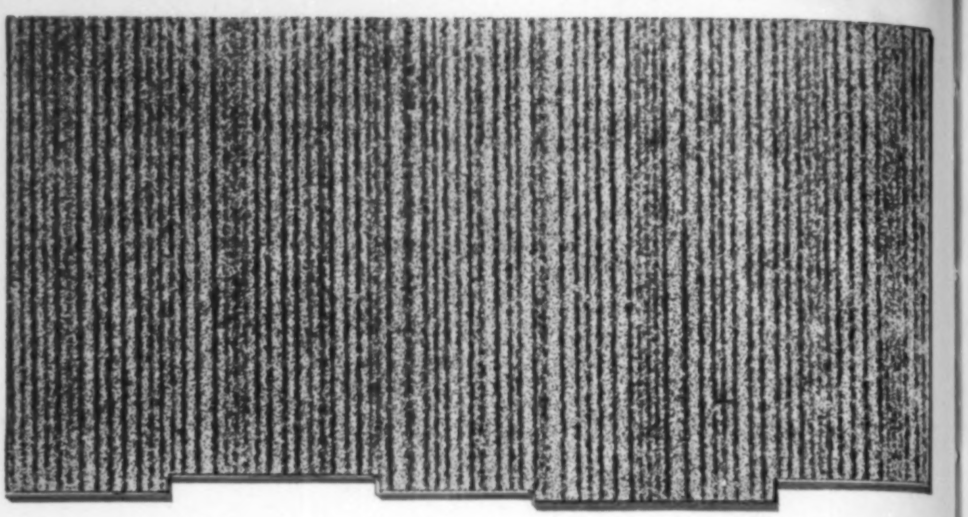

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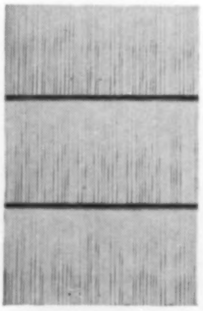
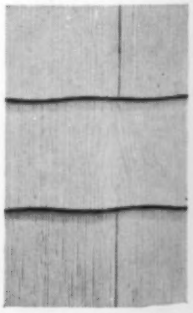


WAVELINE WOODGRAIN



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ARCHITECTURAL RECORD (Vol. 107, No. 5, May, 1950) is published monthly by F. W. Dodge Corp., 10 Ferry Street, Concord, N. H., with editorial and executive offices at 119 W. 40th St., New York 18, N. Y. $4.50 per year; Foreign, $6.50.
(Regular Edition)

Entered as second-class matter at the Post Office, Concord, N. H., March 16, 1946, under the Act of March 3, 1879

ARCHITECTURAL RECORD

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Architectural Record (combined with American Architect and Architecture) is published monthly by F. W. Dodge Corporation, 10 Ferry St., Concord, N. H., with Editorial and Executive Offices at 119 West 40th Street, New York, N. Y. Western Editorial Office, 2813 Channing Way, Berkeley, Calif. Thomas S. Holden, Pres.; Howard J. Barringer, Vice-Pres. and Treas.; Irving W. Hadsell, Vice-Pres.; Chauncey L. Williams, Vice-Pres.; Sanford D. Stockton, Jr., Secy.; Walter F. De Saix, Asst. Treas.; Edwin H. Freed, Asst. Treas.; Irving B. Satin, Asst. Treas. Member Audit Bureau of Circulation and Associated Business Papers Inc. Architectural Record is indexed in Reader's Guide, Art Index, Industrial Arts Index and Engineering Index. Subscription rates: United States and Possessions, Canada, Cuba, Mexico, Central and South America, and Spain, $4.50 the year, $7.50 for two years, $9 for three years; elsewhere, $6.50 the year, $11.50 for two years, $15 for three years. Single copy $1. Circulation Manager: Marshall T. Ginn. Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage. Other Dodge Services: Real Estate Record & Builders' Guide, Sweet's Files, Home Owners' Catalog, Dodge Reports & Dodge Statistical Research Service.

COVER:
House in Massachusetts designed by The Architects Collaborative (pages 128–136). Photo by Lionel Freedman — Pictor.

Vol. 107 · No. 5 *May 1950*

THE RECORD REPORTS 9
- Progress in Reverse: An Editorial 11
- News from Washington. By Ernest Mickel 15
- News from Canada. By John Caulfield Smith 16
- Construction Cost Indexes 26

REQUIRED READING 28

SITE AND SYMBOLISM DICTATE DESIGN 101
Southern Brookline Community Center — Temple Emeth, Brookline, Mass. Isidor Richmond and Carney Goldberg, Architects

POWER PLANT PROGRESS 108
Sewaren Generating Station, Public Service Electric and Gas Company. Walker & Poor, Consulting Architects

SMALL TEXAS OFFICE BUILDINGS PLANNED FOR UPTOWN SITES 114
1. Page, Southerland & Page Building, Austin. Page, Southerland & Page, Architects 114
2. Thornhill-Craver Office Building, Houston. MacKie and Kamrath, Architects 116
3. Technical Instrument Company, Houston. MacKie and Kamrath, Architects 117
4. Remington-Rand Building, Dallas. George L. Dahl, Architects & Engineers 118

SUN, SHADOW AND SILHOUETTE 120
United Nations Secretariat. Louis B. Schlivek photos

BUILDING TYPES STUDY NO. 161 . . . HOUSES

DO SMALL HOUSES AFFORD A SATISFACTORY PRACTICE? 124
Conclusions reached after many months of interviewing architects, builders and owners

I. ARCHITECTS AND INDIVIDUAL CLIENTS 128
Examples: Four New England houses by The Architects Collaborative; their office organization, methods of practice, results

II. ARCHITECTS AND OPERATIVE BUILDERS 137
Examples: The Revere Quality House Program — a résumé of the experiences of architects from San Francisco to Boston, Chicago to Dallas, in designing eighteen houses for builders, plus a New Jersey development by Petroff & Clarkson

III. ARCHITECTS AND PREFABRICATION 152
Example: History of The Acorn House; deductions from the experience of the protagonists, Carl Koch, John Bemis and their associates

ARCHITECTURAL ENGINEERING
TECHNICAL NEWS AND RESEARCH

SITES MOVED TO OFFICE BY AIR PHOTOS 159
By Walter L. Weitner

HOUSE PANEL-CONVECTION HEATING SYSTEMS 163
By Zay Smith

LOCKER ROOM CONCENTRATES ON EFFICIENCY 165
Rust Engineering Company

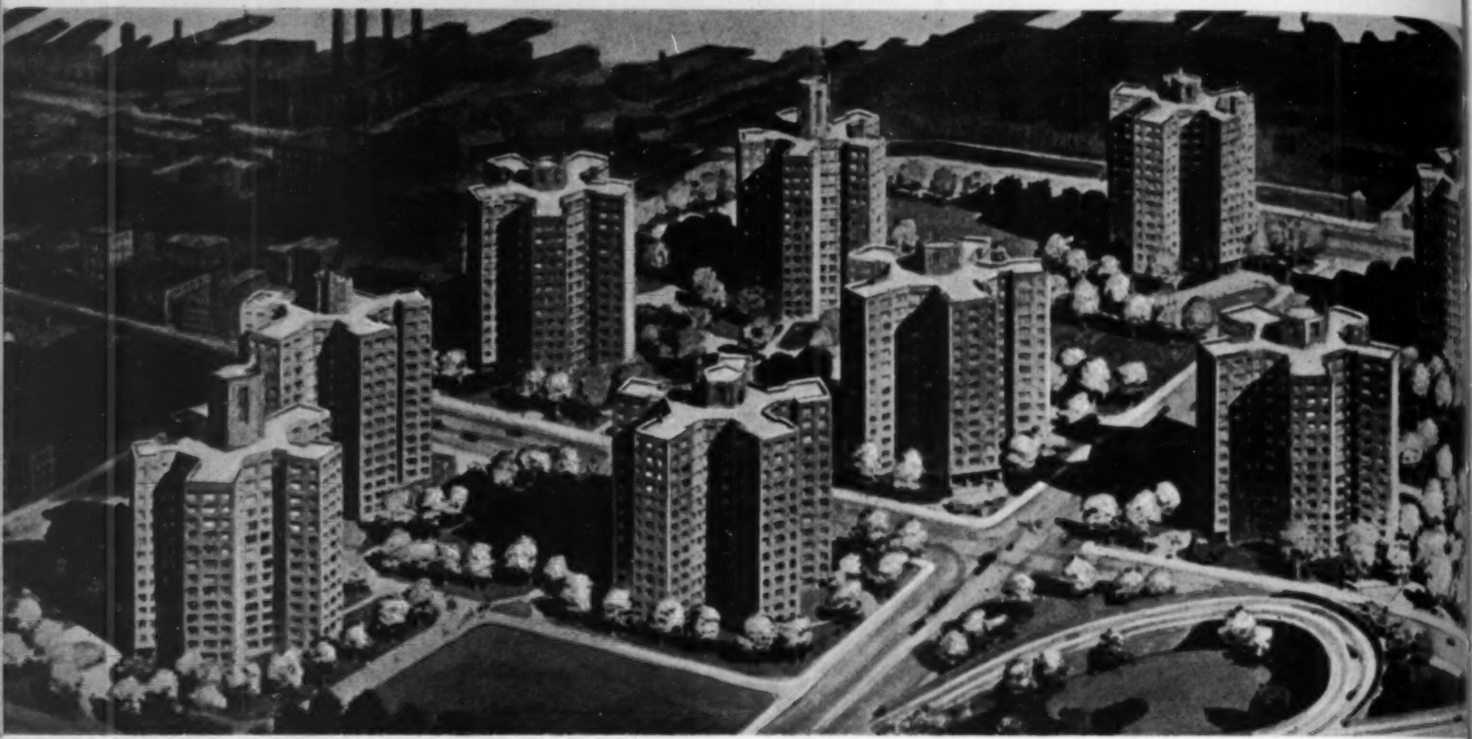
TECHNICAL NEWS 166

PRODUCTS . . . for Better Building 167

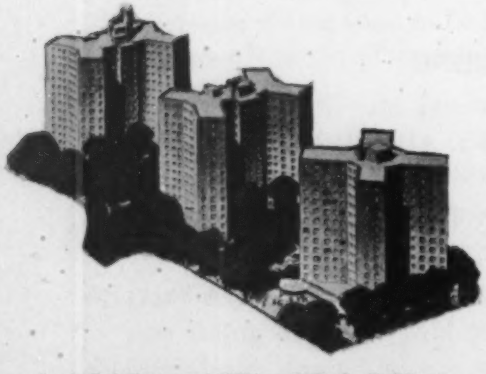
MANUFACTURERS' LITERATURE 168

TIME-SAVER STANDARDS 171
Graphical Symbols: (1) Piping; (2) Heating and Ventilating; (3) Air Conditioning

A DRAMATIC NEW
TO LARGE-SCALE



The ten 14-story pentagonal structures above show the Farragut Housing Units in Brooklyn, N. Y. as they will appear when completed. This newest addition to New York City's housing will provide living quarters for 1400 families. At this printing the New York City Housing Authority has awarded contracts for seven of these impressive units to John A. Johnson & Sons, Inc.



Louis E. Jallade and William T. Koch, Architects

Pictured above are three units of the extensive 14-story Melrose Houses. This 1023 apartment project, of which the first section is now under construction by John A. Johnson & Sons, Inc., is under the direction of the New York City Housing Authority with the cooperation and state-aid of the New York State Division of Housing.

PROVIDING REQUIRED HOUSING IN MANY AREAS

Other housing construction now under way or completed by Johnson during 1949, in addition to Farragut Houses, Brooklyn; Melrose Houses, Bronx; and the Mount Vernon Housing Authority's apartment buildings illustrated, include substantial projects at New Rochelle, Schenectady, Troy and Hempstead, L. I. Also in process of construction or completed during 1949 by John A. Johnson & Sons, Inc. are housing projects of one million dollars and upwards in Hartford, Conn., Andrews Field, Md., Oak Ridge, Tenn. and Cold Springs, Ky.

THE RECORD REPORTS

EYES ON WASHINGTON AS A.I.A. HOLDS 82ND ANNUAL CONVENTION

"Urban Planning" and "Lighting and Illumination" Featured On Busy Agenda; Also Offered: Elections, Amendments, Tours

ONE OF THE BIGGEST and busiest meetings ever takes shape as The American Institute of Architects gathers at the Hotel Mayflower in Washington, D. C., May 10–13 for its 82nd annual convention.

Urban Planning and "Lighting and Illumination" will be featured in speeches and symposia throughout the four-day meeting; and group discussions on schools, housing and hospitals have been scheduled.

A tour of the White House reconstruction and a bus tour of Washington featuring urban development are also on tap; and for the first time in years, a symposium will deal with the practical affairs of the architect's office, when David C. Baer, chairman of the Committee on Standard Accounting Methods for Architects, leads a discussion on The Institute's Standardized Accounting System on the opening day.

Award Winners

Highlights of the convention will be the awarding of the Gold Medal to Sir Patrick Abercrombie of England and the conferring of Fellowships at the annual dinner on the night of May 12. Other awards to be made at the convention will bring the Fine Arts Medal to Edward Steichen, photographer; the Craftsmanship Medal to Joseph Gardiner Reynolds, artist and designer of stained glass windows; and honorary memberships to F. Stuart Fitzpatrick, manager of the Construction and Civic Development Department of the Chamber of Commerce of the United States, and Miss Harlean James, executive secretary of the American Planning and Civic Association. Jose Alvarez Calderon, "the most distinguished practicing architect of Peru," will be made an honorary corresponding member.

Bylaw Changes

Affairs political will gain extra stimulus when the first morning's session has placed before it a change in the bylaws and in the Charter of the Institute, which will permit addition of two regional districts and two additional regional directors, as well as the new amendment in the bylaws which would provide for election of a president-elect each year.

Actual balloting for officers and directors will not take place until the second day and announcement of results is scheduled for the final session Saturday morning.

Sir Patrick Abercrombie leads off the Urban Planning symposia with the first major speech of the convention. Other participants in the planning phases spotted throughout all four days will include Perry Coke Smith, Albert Mayer, Dr. Helmut Landsberg, Sen. Ralph Flanders of Vermont, Paul Windels, Kenneth Wischmeyer, Arthur C. Holden and Lewis Mumford.

Physical factors in planning, climatology and planning, decentralization, and regional planning in smaller communities are among the special aspects of planning which will be considered. "The Federal City" will be the topic of a luncheon session with the Joint Committee on the National Capital.

"Lighting and Illumination" symposia will include sessions on "Basic Factors of Vision," "Designing with Light," and "Functional Illumination." Listed to carry this phase of the program are Lawrence B. Perkins, C. L. Crouch, Ernest J. Kump, W. W. Caudill, Prof. R. L. Biesele Jr., Stanley McCandless, Howard Sharp and Morris Ketchum Jr.

Seminars Scheduled

Louis Justement, Ernest Kump and Slocum Kingsbury will act as moderators at the Thursday evening seminars on housing, schools and hospitals.

At the opening session on May 10, announcement will be made of the 1950 National Honor Awards for Architecture and the 2nd Product Literature Competition Award.

Changes in the bylaws to come before the convention include a proposal to make United States citizenship a requisite for Institute membership.

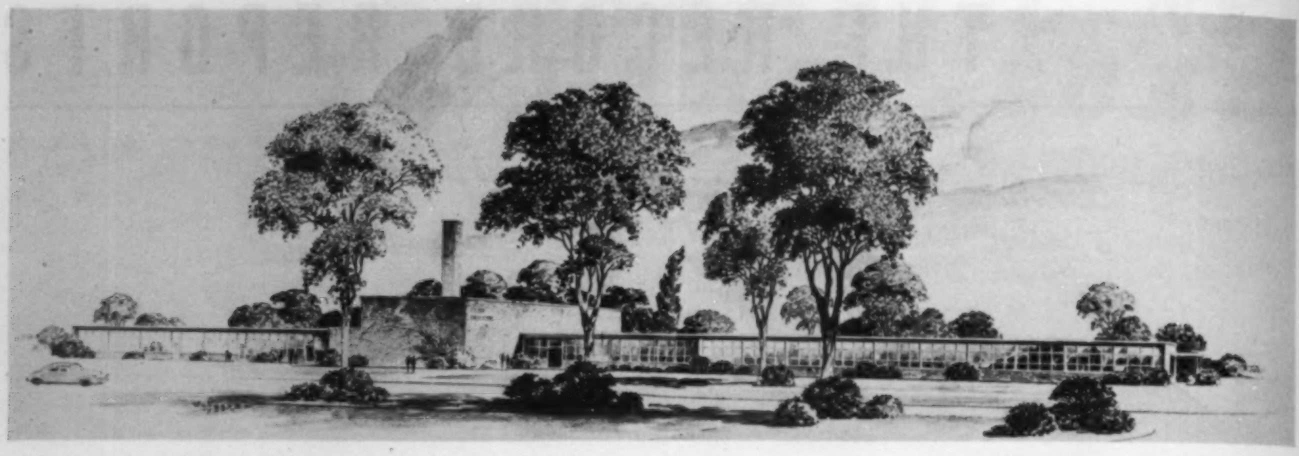
Post-convention tours offer four options: a five-day air cruise to Bermuda, an eight-day air cruise to Bermuda, a two-day trip to Colonial Williamsburg and a two-day tour to National Bridge, Monticello and Ashlawn. Tours of Washington have also been arranged to follow adjournment on the final day.

Left to right: Edward Steichen, Joseph Reynolds, Sir Patrick Abercrombie, Miss Harlean James, F. Stuart Fitzpatrick

Karsh photo

Harris-Ewing photo

Blackstone Studios



CICERO SCHOOL PLANNED FOR LOW-COST BUILDING

A NEW ELEMENTARY school for the North Syracuse (N. Y.) Central School District (photo of rendering above) is now under contract to cost about 71½ cents per cu ft.

The Cicero School, which will house kindergarten through sixth grade, is "definitely not minimum construction," say the architects. Corridors have terrazzo floors and glazed tile wainscot. All trim and cabinet work is birch and all rooms are plastered.

The kindergarten, first and second grades are separated from the higher grades by the play and administration facilities. Each classroom has its own toilet room and, above third grade, a toilet room for each sex. Of special interest in the classroom plan are the "work centers," commodious cabinets and cork boards, and the location of typical classroom wardrobes in the corridors.

Architects are the associated firms of Harry A. and F. Curtis King and Sargeant-Webster-Crenshaw & Folley.

MARCH BUILDING VOLUME REACHES ALL-TIME HIGH

SETTING A NEW all-time high for monthly construction volume, the March total of building and engineering contracts awarded in the 37 states east of the Rocky mountains was $1,300,201,000, according to the F. W. Dodge Corporation's monthly report.

Last month's figure was 74 per cent ahead of March 1949. The previous record, set in June 1942, was $1,190,264,000.

Dodge figures also showed a new first quarter record, with totals for the period of $2,810,586,000 and 245,207,000 sq ft of new building space.

Biggest gain was registered by residential building, up 128 per cent for March; next was non-residential.

NEW FILM SERIES BEGINS WITH FEATURE ON HOMES

"INTRODUCTION to Architecture—American Homes," an eight-minute film featuring houses by some of America's best-known architects, has been produced by the Strick Film Company as the first of a series on architecture.

Designed not only for the school field but for the architect, the film stresses the role of the architect in any well-designed house.

Carl Lerner and Joseph Strick directed the film, which was shot in almost every region of the United States, including the Southwest, the Central States, the Middle Atlantic States and New England. Main advisers were Dean Arthur B. Gallion of the School of Architecture at the University of Southern California, Robert McMillan of the Architect's Collaborative, Cambridge, Mass., and Matthew Ehrlich of Philadelphia.

Later films in the series would cover other building types, bridges, and the architecture of foreign countries.

Below: photographs from the Strick Film Company's new movie. At left, model of a house by Richard Neutra; at right, diorama by Burdick of a house by Edward Stone

A.I.A. SEMINAR IS PLANNED WITH HOSPITAL CONFERENCE

Another group of architects will have an opportunity to exchange ideas with the people who operate hospitals on May 18 and 19, when the Minneapolis and St. Paul chapters of The American Institute of Architects sponsor a two-day seminar on hospital planning. The seminar is being held in Minneapolis in conjunction with the Upper Midwest Hospital Conference, an annual event attended by some 2000 hospital administrators and allied specialist groups.

Executive Editor Robert Cunningham of *Modern Hospital* will serve as moderator of the first morning's session on "Programming a Hospital," with Thomas F. Ellerbe describing the architect's role and James Hamilton of Minneapolis, the consultant's.

At the afternoon session on hospital construction, speakers will include Dr. Helen Knutson, director of the Section of Hospital Facilities in the Minnesota Department of Health; Carl Erikson, of Schmidt, Garden & Erikson, Architects, of Chicago; Dr. Willmar M. Allen, president of the American College of Hospital Administrators.

With Carl Erikson as moderator, the second morning session will offer discussions of "The Nursing Unit," by Miss Margaret Filson, assistant professor and director of nursing service, University of Minnesota; "Facilities for the Care of the Newborn," by Dr. John Adams, pediatrician at University Hospitals and General Hospital, Minneapolis; "Aseptic Technique," by Dr. Carl Walter, teacher of surgery at Harvard and chief surgeon, Peter Bent Brigham Hospital, Boston.

A talk on operating room materials and planning by Robert Cutler of Skidmore, Owings and Merrill will open the final session, which will have Marshall Schaffer, chief of the Technical Services Branch, Division of Hospital Facilities, U. S. Public Health Service, as moderator. Hospital service departments and fire safety design are on the agenda, as well as a talk on functional relationships of departments by W. H. Tusler.

The committee organizing the seminar is under the co-chairmanship of Roy N. Thorshov of Long and Thorshov, Minneapolis, and Thomas F. Ellerbe, Ellerbe & Co., St. Paul. Other members of the committee include W. H. Tusler, Victor C. Gilbertson, Arnold I. Raugland and Eugene D. Corwin. Edward H. Noakes, Minneapolis, is executive secretary of the Committee.

PROGRESS IN REVERSE!

Veterans Administration Frowns on Modular Design

Just as this issue of Architectural Record goes to press, we learn that the Veterans Administration considers it "to be to the best interest of the government to continue the use of non-modular sized materials in the design of Veterans Administration Hospitals regardless of location." If the VA stands its ground in enforcing this ill-advised precept (which was laid down first when it refused to open the specifications for the Oklahoma City Veterans Administration Hospital to modular-sized brick), architects will have a new and powerful argument for the return of the design of VA projects to private firms.

When the Veterans' hospital construction program was initiated shortly after World War II, the design of the hospitals was under the supervision of the U. S. Army Corps of Engineers, which contracted with private architectural and engineering firms to develop the designs. The Chief of Engineers addressed a memorandum to all contracting architectural and engineering firms urging them to design their projects on a modular basis.

The attitude of the Corps of Engineers was clearly stated by H. B. Zackrison in an address to the A.I.A. convention in Grand Rapids in 1947. He said in part, "The Chief of Engineers and his staff have . . . considered the various ways by which our total costs of construction might be reduced. One of these was the use of modular products and the application of the principles of modular design to Veterans Administration hospitals. . . . It is the belief of the Chief of Engineers that the use of modular products and modular design should result in economies of construction."

The Corps of Engineers is not alone in the belief that modular coordination offers an industry-wide basis for increasing the efficiency of building design and construction. The 81st Congress appropriated funds for studies on dimensional coordination which are being carried on by the Housing and Home Finance Agency. In addition, plans have recently been completed by the A.I.A. and the Producers' Council to retain a specialist to promote the use of modular coordination. Obviously, the stand taken by the VA is inconsistent with current progressive opinion.

The VA states that "Because of the inability of industry nation wide to adopt the modular sizes in the manufacture of their products, and since *the Veterans Administration construction program is nation wide*, it has been necessary for the Veterans Administration to adopt the policy of designing for regular non-modular sizes."

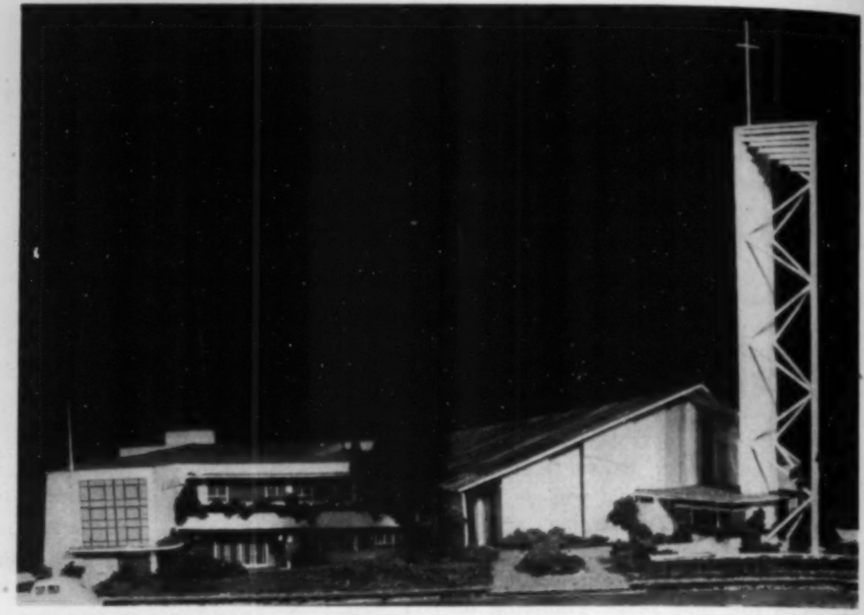
This is one of the best arguments we have heard for returning the design of veterans' hospitals to private architectural firms who are thoroughly conversant with local conditions. Such a policy would remove arbitrary restrictions governing the use of modular products.

As modular products become increasingly available at the local level throughout the country, every inducement should be provided to promote their use. It is hoped that the VA will support this policy.

Harold D Hauf

Editor-in-Chief

VICTORY FOR "MODERN": WHERE ECONOMY REIGNS



Earl Saunders Photo

A ROUNDABOUT VICTORY for modern architecture has been won by Little Rock architects Brueggman, Swaim & Allen, whose First Methodist Church for North Little Rock is now under construction.

To build a sanctuary, chapel and educational building for the funds made available by the membership required departing from any traditional style of architecture to a purely functional one. Now, the architects report, many people who first accepted the design for economy only are coming to approve its mass and lines. Although there have been complaints that "it doesn't look like a church," the architects can find a certain triumph in the fact that "so far no layman has confused it with a building constructed for any other purpose."

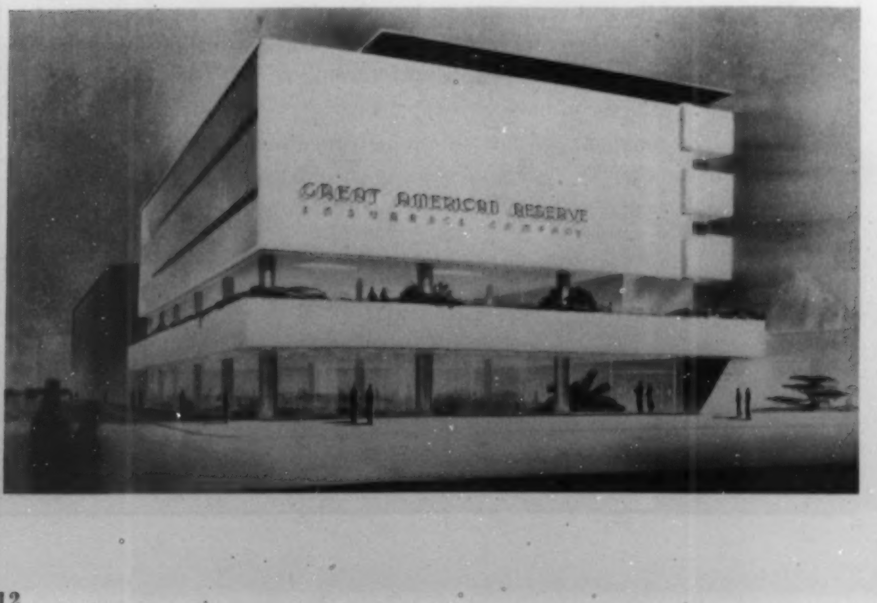
Height was omitted in the main sanctuary, and there is no cut or cast stone in the building. The church was designed to fit a site which, although spacious, has a 35 ft contour drop from front to rear. The carillon tower, constructed simply and economically of aluminum, is at the entrance corner on the highest point of ground. Ramps lead directly into any part of the building except the top floor, and there is off-street parking for 87 cars.

WINDOWLESS WALLS FOR SUN CONTROL USED FOR DALLAS OFFICE BUILDING

WINDOWLESS WALLS are used above second-floor level on three sides of the Great American Reserve Life Insurance Company's Home Office Building in Dallas, Tex. The lower stories have walls of glass.

Omission of windows on all sides of the upper stories except the east exposure was planned to minimize an undesirable western sun.

Facing on all facades is Texas shell stone, except for first floor columns, which are faced with Texas pink granite.



Some innovations which proved both space- and cost-saving came out of the architects' efforts to plan for the owners a building both modern and economical.

It was decided in the beginning stages of the building planning to have the machine room on the first floor. Although first floor space is usually very valuable, the location of this building is such that it was felt space on the first floor could be used for a machine room without disadvantage. This location means there is easy access to the machine room.

Because of the low ratio of window area to outside wall area, it was decided to dispense with radiation underneath the windows and use tempered air as the means of heating the building. To supplant the radiation under the windows, tempered air is introduced just above the window and blown downward over the glass area. This offsets the cold air currents that normally originate at the windows.

Both heating and cooling of the building are done through the same ducts and outlets. The building is so zoned that each section can be controlled separately in order to provide uniform conditions throughout the entire structure. Each zone has a separate air duct leading back to the central air handling units.

For the sake of economy and convenience, common coils were used for both cooling and heating. This is accomplished by circulating chilled water through the coils for cooling in the summertime and circulating hot water through them for heating in the winter.

Except for rental space on the ground floor, the building will be owner-occupied.

George L. Dahl, Architects & Engineers, of Dallas are the architects.

THE RECORD REPORTS

NEWS FROM WASHINGTON *by Ernest Mickel*

11 Technical Projects Inaugurate HHFA Research Program, Foley Names Advisory Group; Co-op Plan Beaten; Military Housing Applications Due for Revision; Deny Increase in Hospital Funds; Reorganization Proposals Under Debate

THE PHASE of the federal housing program referred to by Administrator Foley as being the most important is research. The most complete investigative probe into housing this country has ever known was authorized by Congress last year in the Housing Act of 1949. Just now the tangible results of that action are beginning to show. During the first quarter of 1950 the Housing and Home Finance Agency announced 11 agreements had been made with private and government bodies covering a rather narrow range of technical problems, principally those that have already seen some research work. This was but the beginning, however, of an accelerating program. The agency is expected to announce new agreements more frequently throughout 1950.

This is what has been accomplished up to April 1:

In mid-March HHFA first announced a series of 11 projects involving investigations in the fields of plumbing and sewage disposal systems, heating and ventilation, chimneys and flues. These are to be carried out by the National Bureau of Standards, the U.S. Public Health Service and the University of Illinois. By April 1, the agency had arranged four more projects, the investigations to be made into deterioration from water vapor in frame walls and the destructive effects of mold and fungi caused by soil moisture in the crawl space of basementless houses. Here, HHFA contracted with Pennsylvania State College and the U.S. Department of Agriculture to do the actual research.

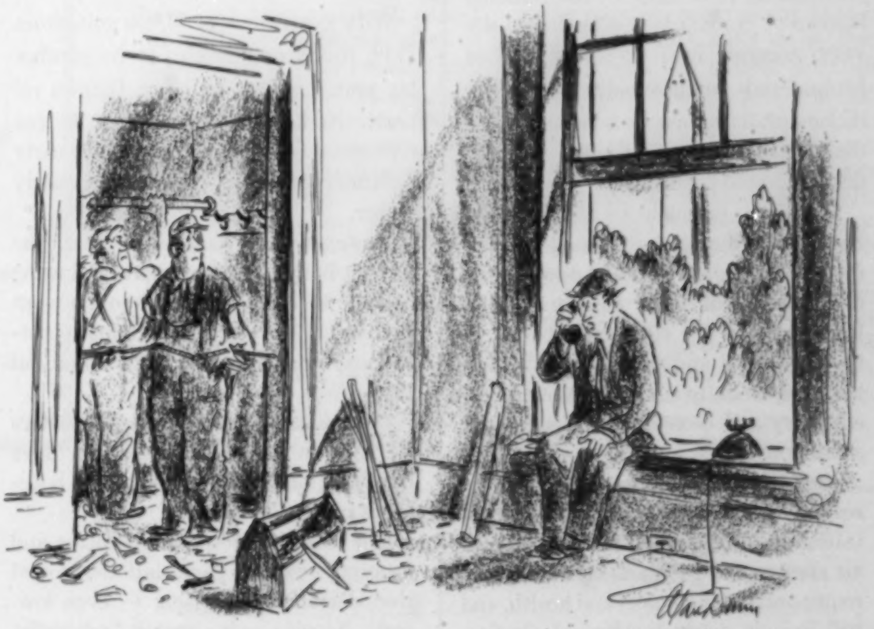
Thus, the private construction industry agreed Foley's new Division of Research, headed by Dr. Richard U. Ratcliff, had made a creditable initial showing in the spread of funds appropriated to expand this activity. Entire purpose of the program is to lower housing costs and encourage home production, to give the simple definition. Of course the ramifications are many and minute, reaching into areas of improved building codes; modular coordination; standardized methods for assembling houses, materials and equipment; improved design and construction; new material types; and the investigations may even relate to appraisal, credit, housing needs, demand and supply, land costs, use and improvement, as well as related technical and economic research.

Research Details

Functioning in this broad span only vaguely outlined by Congress, the agency gave the following details on the projects first announced:

Plumbing — The investigations to be made for the HHFA by the National Bureau of Standards and the University of Illinois on plumbing installations are intended to develop authentic test data which are now lacking for certain phases of plumbing hydraulics. Such data are needed to reconcile different standards and requirements prevailing in the industry and in local codes and enable code officials and the industry to develop more uniform practices and requirements for housing purposes on a sound, safe and economical basis. The studies supplement earlier extensive tests in this field sponsored by HHFA with industry and government cooperation. The further studies will be concerned with the hydraulic flow through plumbing installations, and will cover the loading effect of fixtures, determination of the limits of ventings, the effectiveness of traps and the testing of simplified piping arrangements and reductions in the size of piping.

Septic Tanks — A large proportion of the housebuilding since the end of the war has occurred in suburban and outlying areas which urban sewerage facilities do not serve and where individual or project installations are necessary. More than two-fifths of the non-farm housing built in 1949, for example, was in unincorporated areas. Septic tanks have therefore become a significant service and cost factor in such housing construction, and also in maintenance of adequate sanitary standards in these areas. Studies thus far made by the U.S. Public Health Service for the HHFA have shown that more efficient septic tank installations than those previously installed can be built at substantially lower cost. The present project is for continuation of these studies at the Environment Health Center of the U.S. Public Health Service at Cincinnati, Ohio. The studies are being made on methods and effects of compartmentation; effect of depth and of



"Yes, Mrs. Truman . . . Yes, Mrs. Truman . . ."

— Drawn for the RECORD by Alan Dunn

WASHINGTON

(*Continued from page 15*)

variation of inlet and outlet arrangements; investigations and tests on the determination of soil clogging characteristics; and methods of determining absorption of effluents by various types of soil.

Chimneys and Flues — Chimneys and flues constitute an important safety factor for houses and the neighborhood as well as a significant cost item in housing construction. More exact information is needed in this field with respect to materials and design in actual housing use as to safety, performance and cost. The proposed investigations, to be carried out by the National Bureau of Standards, will study the entire range of conditions to which chimneys are subjected in actual use and will test the effect of these conditions on materials and performance in order to develop a rational design basis for masonry chimneys in accordance with conditions of housing use.

Heating and Ventilation — The rapid development of new types of heating systems in housing and of new structural and insulating materials has expanded the need for research data in this field with relation to comfort and economy in housing design and construction. The proposed study of thermal conductance to be made by the National Bureau of Standards is intended to develop accurate heat transmission data for materials and assemblies under conditions of actual use in housing and to establish design factors more nearly reflecting actual conditions.

Studies to be made by the National Bureau of Standards of small heating systems are to be directed toward the development of more consistent relations between the required capacity of the equipment and the actual output of the equipment, in the interest of greater efficiency and economy, particularly in small houses.

Investigations by the National Bureau of Standards on ventilation will establish accurate data for calculation of air changes in dwellings and minimum requirements for comfort and health, and will include determinations of air flow through various ventilating devices used in houses.

(*Continued on page 18*)

Panda photography

Pictured above is Gananoque High School, recently completed at Gananoque, Ontario. View is from the Southwest. Architects were Drever and Smith, a Kingston, Ontario, firm

NEWS FROM CANADA *by John Caulfield Smith*

February Building Volume Sets Record for Month

Reversing January's sharp drop, construction awards in February set an all-time record for the month at $64.7 million.

While this figure represented a gain of $1.4 million over February 1949, MacLean Building Reports points out that the cumulative total for the year is still $14.6 million behind that of the first two months of 1949.

— And What's Ahead?

With a carryover of 58,000 units from 1949, this year promises to be another big year for home building, Ottawa reports. N.H.A. approvals were 50 per cent ahead of 1949 in January, and early February returns were proportionately higher.

However, the possibility that the present building boom might be slowing down is evident both from government sources and from an independent coast-to-coast survey made by the *Financial Post*.

Ottawa notes that married quarters for men in the defense services have been trimmed back, and veterans housing is in less demand.

The *Post*, in questioning realtors and property owners' associations, found that demand for housing — even low-cost housing — is easing generally. Prices and rents are lower across the country, with some high rental apartments going begging. Only in Edmonton, Calgary and Regina does the oil boom promise to keep construction at record levels. General indications are that 1951 may be a lower volume building year in Canada.

Builders and employers fear that the 1950 building program may be jeopardized by another round of wage increases. The Toronto plumbers' union seeks a 25-cents-an-hour increase. Although they have been turned down by the Ontario Conciliation Board, they are threatening to strike unless their demands are met.

Employers are resisting just as firmly, taking the position that any wage rise would scuttle the cost stability won in 1949.

"The construction industry's desire to hold the cost line is not based on any intention to gain advantages at the expense of labor," says President Robert Drummond of the Canadian Construction Association. "It is based on the sincere desire to retain the stable cost position which was achieved last year . . . a position which must be maintained if the industry is to continue in the market for a large volume of construction and provide the employment that goes with it."

E. J. L. Stinson, president of *Daily Commercial News and Building Record* of Toronto, predicts that building volume will hold steady through 1950, while costs continue to level off.

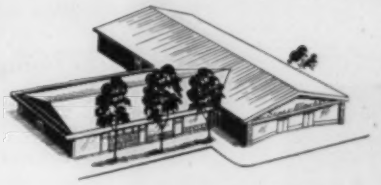
In a recent address before the London

(*Continued on page 208*)

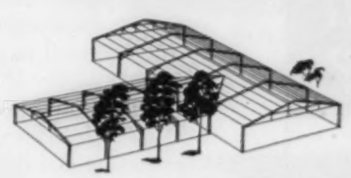
Here's how you can design

a fine, low-cost shopping center

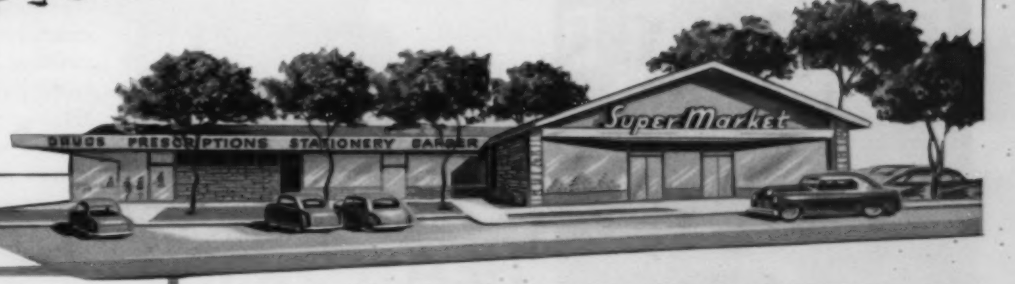
for your new housing development

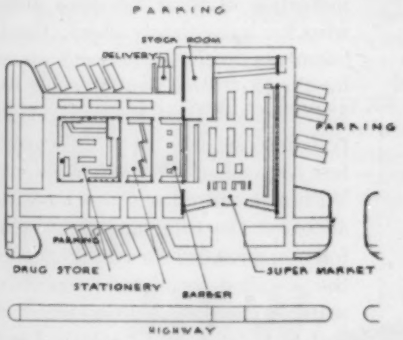


YOU PROVIDE THE ARCHITECTURE



WE PROVIDE THE STANDARD STEEL FRAME





Plan includes two Luria Standard Buildings. Supermarket, 60 feet wide and 100 feet long with 16-foot eave height. Shops, 40 feet wide and 80 feet long, with an eave height of 12 feet.

You save time, effort and expense all along the line—from planning to final erection

Practically all of the components that go into your building designs have long been *standard*, except the most important part of all—the structural steel frame. Until recently, that was the toughest part of any designing job—requiring special planning and engineering and adding greatly to the overall cost.

But now you can design *any* single-story building around a Luria *Standard Frame*—a low-cost, permanent structure that offers you all the advantages of standardization, without the usual limitations. The fine, low-cost shopping center rendered above is a typical example.

Luria Standard Structures are already engineered for you, in design loads calculated to meet the requirements for any part of the country. What's more, they leave you the fullest possible freedom of design and architectural treatment. You can put doors and windows, of any type, wherever you want them. And you can use whatever collateral materials you choose—from corrugated metal to masonry walls and built-up roof.

Luria Buildings are available now—many sizes carried in stock, completely fabricated, ready for fast, easy erection.

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ADDRESS..

CITY..................................STATE..................................

WASHINGTON

(*Cont. from p. 16*)

Additional Projects

Explanation of the subsequent arrangements for studies on water vapor and mold damage told of new problems resulting from the construction of more tightly-built houses. A trend toward new materials that now virtually seal up unit space, and toward the multiple construction of basementless houses spells out the need for added research in this direction. Architects and builders have been aware of increasing problems due to moisture collection in roofs, walls and under floors. In an effort to gather more information on causes and results, the Pennsylvania State College will amass data on water vapor accumulation within wood frame walls exposed to actual weather conditions and to temperature and humidity conditions considered realistic for living habits of occupants.

The first project in this category will provide new knowledge on water vapor characteristics under controlled interior conditions of temperature and humidity, and actual weather conditions on the exterior surface. This is an extension of previous work carried on at Penn State.

A second phase of the water vapor program embraces study of actual temperature and relative humidity ranges found in various types of small dwellings. Special emphasis here will be on living habits of occupants. At least 15 separate dwelling units will be studied.

Projects to Come

Agriculture's part will be undertaken by the Bureau of Plant Industry and Agriculture Engineering. It breaks down into two phases: (1) development of an inexpensive and durable cover for placing over the soil in crawl spaces to prevent the escape of moisture into the air, and (2) determination of methods of design and construction that will prevent rotting and deterioration of frame structures resulting from crawl space moisture. The Bureau will investigate existing conditions in crawl spaces with different moisture conditions. Moisture content will be measured with moisture meters and the structures will be examined for destructive varieties of mold and fungi.

First quarter expenditures for research out of appropriated funds are the best indication of what has been done and what lies immediately ahead. Total commitments on the 11 projects announced for the first three months come to only $222,254, yet HHFA has $1,333,000 to pour into such research agreements before the end of the fiscal year June 30. Within its own shop, the Division has allocated the total amount roughly as follows: $600,000 for contracts covering the so-called sociological aspects of research — markets, economics, etc. — and $700,000 for technological explorations.

Bound by the law to make use of other government facilities, Foley's agency is working on agreements with the Census Bureau for inter-census housing counts — tabulation of housing inventories between the regular dicennial censuses — and with the Bureau of Labor Statistics for general improvement and firming up of its efforts to secure more complete housing statistics.

General Areas Detailed

More than 50 universities and colleges have contacted the federal housing

(*Continued on page 20*)

are you sure the fireplaces you design will be constructed properly?

HEATFORM* is your answer

—it is a complete unit (hearth to flue) and a perfect guide around which anyone can easily build a fireplace of your design.

HEATFORM consists of firebox, throat, dome and damper—which saves on other materials. Builders claim it saves up to 6 hours labor time.

HEATFORM retains the cheerfulness of the open hearth and above all it captures a large percentage of heat ordinarily lost up the chimney and circulates it uniformly throughout the room and even warms adjoining rooms.

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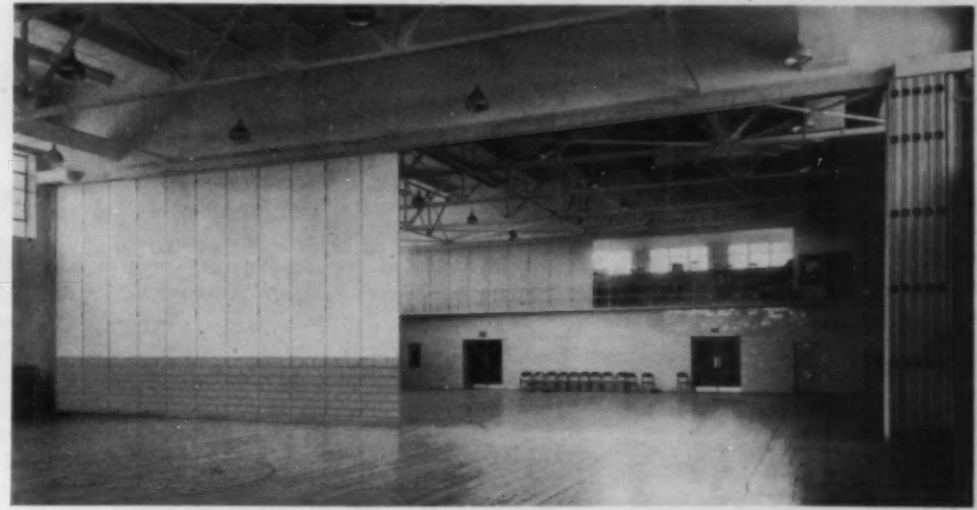

● **HORN FOLDING PARTITIONS** are designed to utilize space and offer a long lasting, efficient operation. Manufactured in a new, modern factory according to specifications a Horn Folding Partition is factory installed to insure maximum operating life. There is a Horn Folding Partition for every problem!

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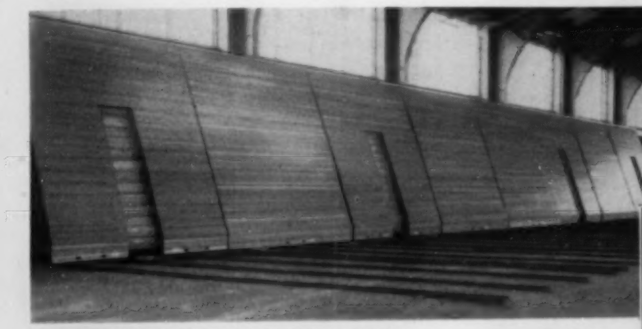

● **HORN FOLDING BLEACHERS** are approved from coast to coast for their many features. You can meet the exacting requirements of present day gymnasium construction and operation when you specify the carefully engineered **HORN FOLDING BLEACHERS.** Ample leg room with approved safety construction offers maximum seating capacity when extended or maximum "playing" space when folded back. Compact, easily maintained and operated the Horn Folding Bleachers offer greater comfort and safety!

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The HORN FOLDING STAGES
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● **HORN FOLDING STAGES** — Mobile open or closed. Non-marring wheels. Available in various widths from 6 feet to 16 feet. Heavy steel understructure, beautiful natural wood finished with two coats of Bakelite Sealer. WRITE FOR FREE DESCRIPTIVE FOLDERS.

• HORN BROTHERS CO. • DIVISION OF HORN INDUSTRIES • FORT DODGE, IOWA, USA •

WASHINGTON *(Cont. from p. 18)*

agency since Congress authorized the program last year. Some have had specific proposals for working out research projects; others have merely inquired as to how they might participate.

In selecting colleges and universities for research agreements, Dr. Ratcliff's division is seeking to place contracts that will further investigative work by the educational institution itself. It is hoped that each project given a school will serve to stimulate more work in the housing field at that particular location; research beyond that specified in the contract.

Architects can expect announcement of new college and university agreements covering the following areas:

1. Cost accounting in the building field aimed at the development of a more satisfactory system for the small builder.

2. A general study of the whole financing structure from the builder's point of view seeking to find out what specific financial burdens constitute barriers and what can be done about them.

3. Rental housing with emphasis on big apartment construction. This may embrace a study of the investment market as it relates to large apartment development and may deal with tenant mobility, etc.

4. Marketing of building materials — a thorough study of all aspects of distribution.

5. The economics of home construction as such. The contribution of the building profession to national life, and other research along these lines.

6. Mortgage markets and their influence on home building at the local level.

7. Sociological studies; research on types of people constituting the housing market. Which type predominates? What are the sizes of families seeking homes? What are their stated needs? The researchers hope to find answers to these and similar questions that can be translated into definite formulas for the industry.

8. Minority groups — a subject closely allied with Point 7, but one to be treated separately. Here, the best housing markets for certain types of housing will be catalogued.

9. Labor and economy. Not to be a study of productivity, but rather an investigation of new labor-saving devices and how they can be better applied.

Task forces are busy now lining up these projects. Many more will be added as new areas are defined and the program accelerates. With a 30 per cent cut in appropriations in view for fiscal 1951, the agency division is extremely active in trying to arrange its research schedules by midyear.

Foley Names Advisory Group

As the research division got up a full head of steam, Administrator Foley named an Advisory Committee on Housing Research to work with Dr. Ratcliff and his staff. The first committee meeting was held in Washington April 17. The body was established to obtain information and advice of experts in appropriate fields, Foley explained. In connection with the appointments, he said:

"This committee, which covers a broad range of experience in the economic, finance, consumer and technical

(Continued on page 22)

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Writes Mr. L. W. Penn, Chief of Technical Services
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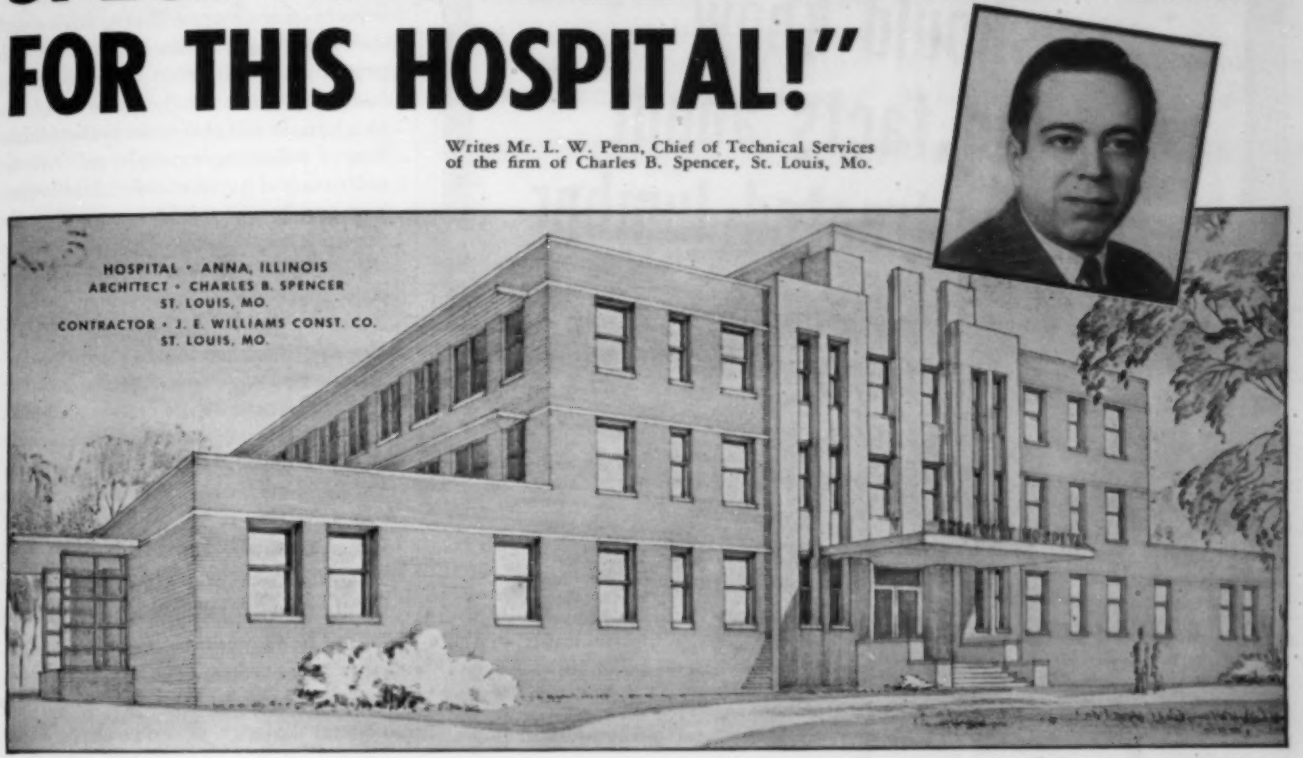
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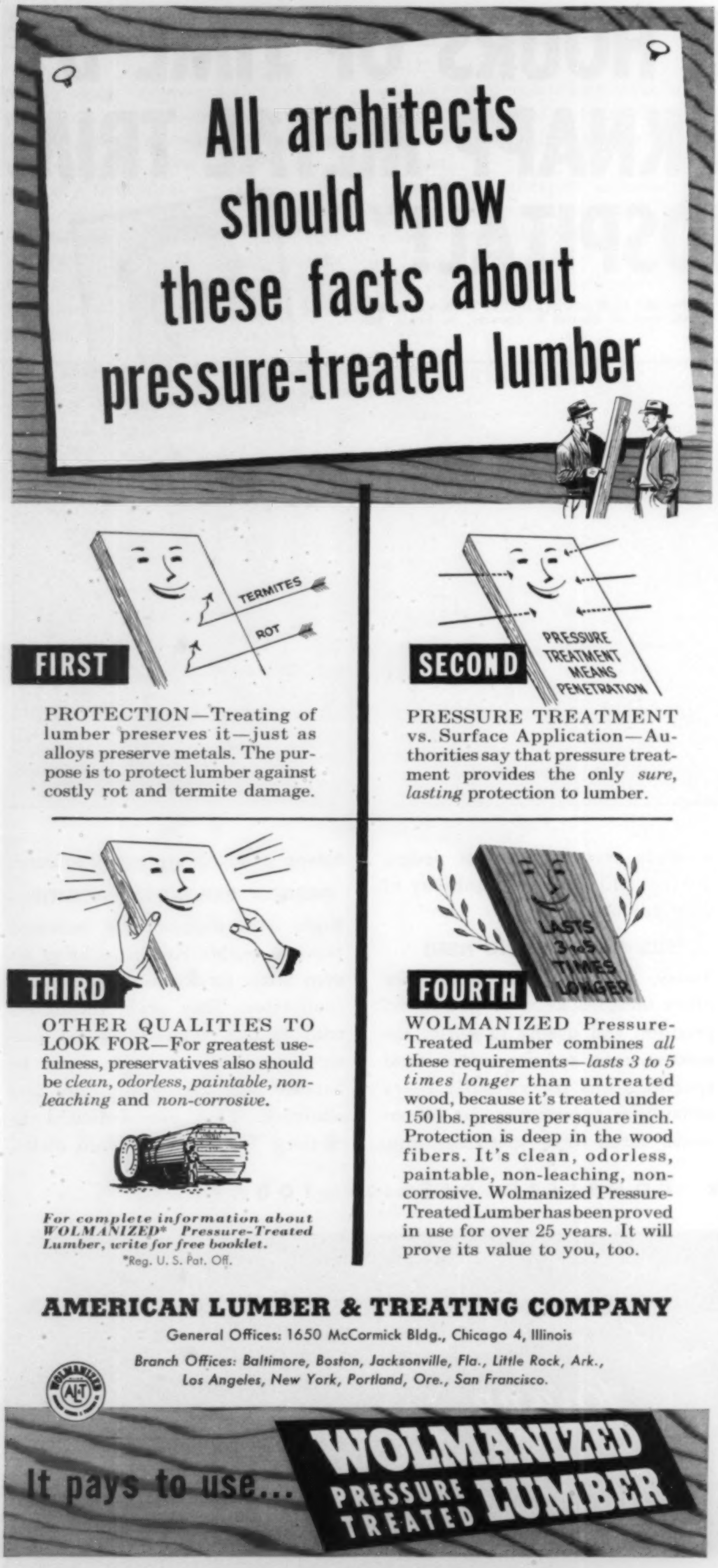

All architects should know these facts about pressure-treated lumber

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PRESSURE TREATMENT MEANS PENETRATION
LASTS 3 to 5 TIMES LONGER

FIRST

PROTECTION—Treating of lumber preserves it—just as alloys preserve metals. The purpose is to protect lumber against costly rot and termite damage.

SECOND

PRESSURE TREATMENT vs. Surface Application—Authorities say that pressure treatment provides the only *sure, lasting* protection to lumber.

THIRD

OTHER QUALITIES TO LOOK FOR—For greatest usefulness, preservatives also should be *clean, odorless, paintable, non-leaching* and *non-corrosive.*

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WOLMANIZED Pressure-Treated Lumber combines *all* these requirements—*lasts 3 to 5 times longer* than untreated wood, because it's treated under 150 lbs. pressure per square inch. Protection is deep in the wood fibers. It's clean, odorless, paintable, non-leaching, non-corrosive. Wolmanized Pressure-Treated Lumber has been proved in use for over 25 years. It will prove its value to you, too.

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It pays to use... WOLMANIZED PRESSURE TREATED LUMBER

WASHINGTON

(*Continued from page 20*)

aspects of housing, will give advice and guidance on the entire housing research program. It will serve as a continuing board of review on the progress of the program. It will also assist in the evaluation of research proposals, and the coordination of housing research activities, both public and private, and aid in the promotion and application of results of the program, with a view to effectuating cost reductions in housing."

Persons invited to be members of the Housing Research Advisory Committee include the following: James C. Downs Jr., president, Real Estate Research Corp., Chicago; John Edelman, CIO, Washington, D. C.; Herbert Emmerich, Public Administration Clearing House, Chicago; Ernest M. Fisher, professor, Urban Land Economics, Columbia University; F. Stuart Fitzpatrick, U.S. Chamber of Commerce, Washington, D. C.; E. Franklin Frazier, social scientist, Howard University, Washington, D. C.; Walter Gehrke, president, First Federal Savings & Loan Association, Detroit; Richard Gray, AFL, Washington, D. C.; Alvin W. Hansen, professor of economics, Harvard University, Cambridge, Mass.; Wallace K. Harrison, architect, New York City; Harold D. Hauf, editor-in-chief, ARCHITECTURAL RECORD, New York City; Henry T. Heald, president, Illinois Institute of Technology, Chicago.

Also Bryn J. Hovde, president, New School for Social Research, New York City; Philip M. Klutznick, American Community Builders, Inc., Chicago; Dorothy S. Montgomery, managing director, Philadelphia Housing Association; Admiral Ben Moreel, president, Jones & Laughlin Steel Corp., Pittsburgh; Paul Oppermann, executive director, San Francisco City Plan Commission; C. F. Rassweiler, vice president, Johns-Manville Sales Corp., New York City; Tyler S. Rogers, Owens-Corning-Fiberglass Corp., Toledo; Walter S. Schmidt, realtor, Cincinnati; Donald S. Thompson, vice president, Federal Reserve Bank of Cleveland; Ralph T. Walker, president, The American Institute of Architects; Maude M. Wilson, professor, Home Economics Research, Oregon State College, Corvallis, Ore.; C. E. A. Winslow, professor emeritus, Yale University; Louis Wirth, Department of Sociology, University of Chicago; Donald Woodward, second vice president, Mutual Life Insurance Co., New York City.

Congress Defeats Co-op Plan

Biggest housing news on Capitol Hill this Spring was the elimination of the cooperative housing titles from the 1950 legislation by both the Senate and the House. Major battles were fought in both bodies on this issue. Strongly supported by labor and organized veterans groups, the plan to set up a new national mortgage association for housing cooperatives and other non-profit corporations was voted down by the Senate 43 to 38, and rejected by the House 218 to 155. The action definitely meant the end of this proposal as far as the current session of Congress is concerned; but advocates of the low-interest federal government loan scheme immediately let it be known they would carry the matter into the fall Congressional campaigns as a live issue.

Committee conferees had to work out several major differences in the two bills. The more important were:

1. Title I (National Housing Act) improvement and repair loans. Senate continued only until July 1, 1952; House made permanent.

2. Low-cost suburban housing. Senate permitted maximum mortgage amount (as contained in Sec. 102) to be $4750, or up to $5500 in high cost areas. House version had no special provision for FHA mortgage insurance for low-cost housing in outlying areas. Total insurance authorization of $250 million for this program was allowed.

3. Title II Authorization. Senate increased the total by $750 million immediately, providing added $1 billion on recommendation of the President. House increased this authorization by $1.25 billion with an additional $1.5 billion on approval by the President.

4. Sales Housing. Senate liberalized and expanded FHA mortgage insurance provisions of Sec. 203 (b) (2) but the House bill contained no such provisions.

5. Both bills modified the Title II permanent rental housing mortgage insurance program with Sec. 207 expected to catch the activity formerly centered under Sec. 208 of Title VI, which Congress permitted to expire March 1.

6. Cooperative housing mortgage insurance; not to be confused with the defeated cooperative housing loan plan. The Senate added a new Sec. 213 to the National Housing Act to provide mort-

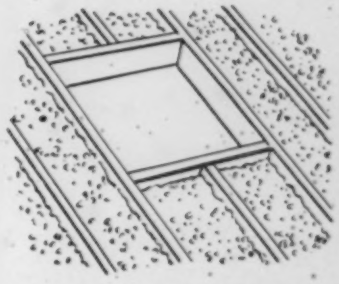
(Continued on page 24)

How to make provision for attic fans in your homes

It is a simple matter to plan new homes so that they can be made comfortable throughout hot summer months. The two steps described below will save money for owners by providing for inexpensive installation of package attic fans, the most economical and practical means of cooling an entire house.

Step 1. Frame for ceiling opening over hallway.

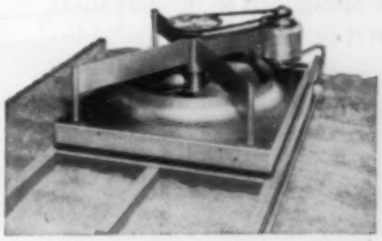
By framing and installing fan when home is built, no extra construction expense is involved. If installation is to be made later, framed opening can be temporarily plastered over or closed with plywood.



Step 2. Provide adequate louvres in proper location.

On new construction it costs very little to include ample exhaust openings to handle attic ventilation. These may be gable louvres or porch, soffit or basement exhausts, depending on the design of the house.

Installation of Hunter Package Fan can then easily be made when home is built, or later



This new fan is a compact unit, with built-in fan, motor and suction box. Fits low-clearance attics. Certified air delivery ratings for any size home or climate.

Automatic or pull chain shutters are quiet, tight-closing. Fit narrow hallways. Soft ivory finish (baked enamel) harmonizes with the color scheme of any room.

MAIL FOR COMPLETE CONSTRUCTION DETAILS

Hunter Fan and Ventilating Company, 396 S. Front St., Memphis 2, Tenn.
Send copy of "How to Cool for Comfort" to:

Name..Firm..

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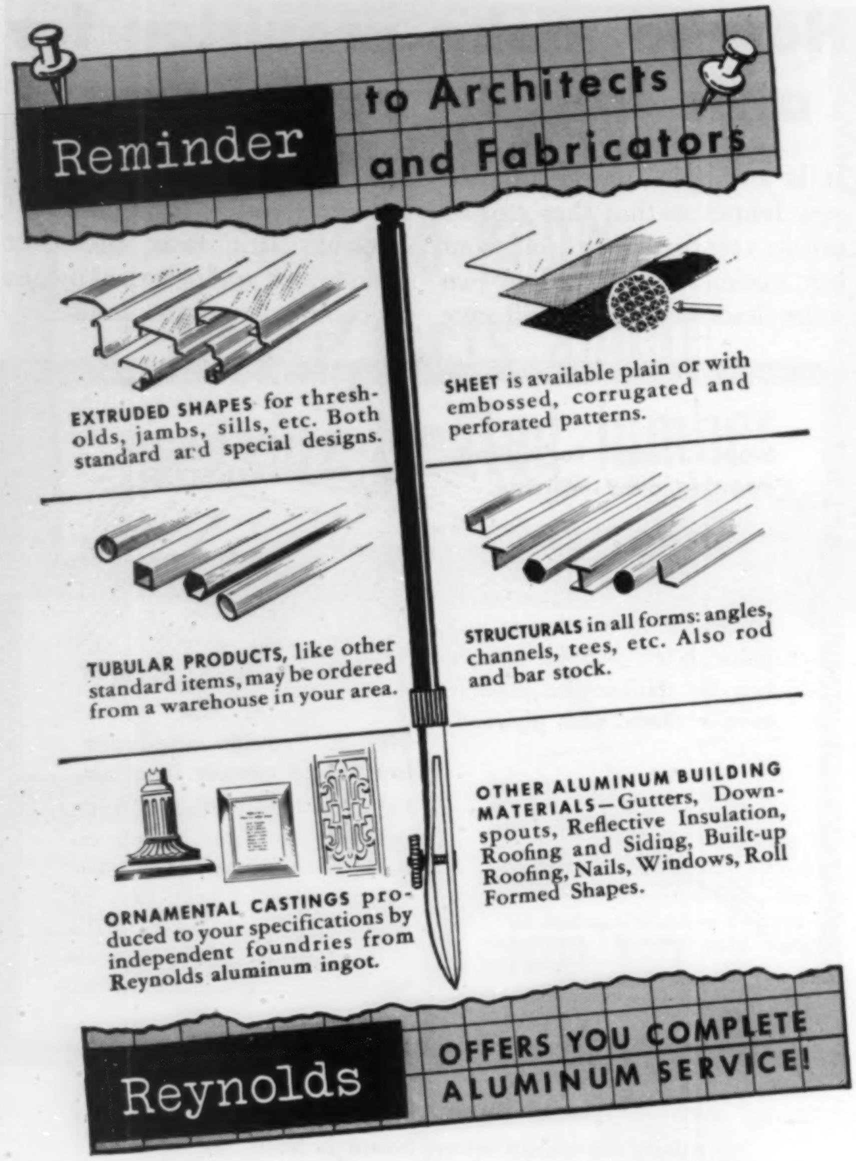
Hunter Package Attic Fans



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WASHINGTON

(*Continued from page 23*)

gage insurance of cooperative housing projects, but the House made no such move.

7. Secondary market purchase authorization in Federal National Mortgage Association. House authorized immediate increase of $500 million and additional $250 million on approval of the President. The Senate deferred action because its Banking Committee was considering the entire secondary market problem.

8. Both branches permitted Sec. 608 rental housing insurance authorization to expire as of March 1. The Senate version transferred $400 million from the government war housing mortgage insurance fund over to Sec. 608 to permit processing of applications received up to February 1. The House version provided an additional $600 million and sought to have all applications received up to March 1.

Military Housing Gets Attention

There was almost unanimous agreement that the Title VIII (Wherry Act) military housing program has been in a state of ill health since before the first of the year. The Secretary of National Defense clamped down on applications for sponsorship of housing projects under Title VIII as early as last December 16, and no satisfactory substitution for the original plan had been put into effect by April 1. But prospects were much brighter for an early resumption of applications under a revised system which would give architects the consideration they deserve.

Up to this point each service had been trying to administer its own military housing program. Confusion and inefficiency resulted. With the requirement that prospective sponsors submit fairly complete plans and specifications with their offers, the architect stood to lose heavily. There were reports of underpayment even in instances where sponsor-bidders got the job.

The Defense Department and Federal Housing Administration now, however, have worked out a new agreement between them under which the military will be responsible for selecting an architect for each project, then take competitive bids from builders on the plans

(*Continued on page 176*)

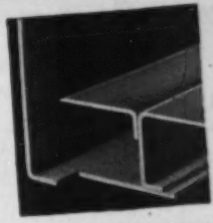
MEDART

STEEL LOCKERS

5 POINT SUPERIORITY

1

SECURITY because the door locking mechanism *is pickproof* . . . dual-latch . . . concealed in the channel lock rod it is pre-locking, positive latching. Operates whether door is slammed or gently shut. Exclusive Medart patent.



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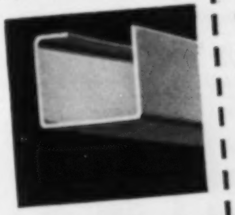
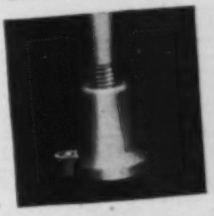
STURDY BOTTOMS . . . to take punishment. Full width 1/4 inch flange of bottom rests solidly on heavy 16 gauge steel frame member. No possibility of breaking or sagging. Be sure to compare this Medart feature with ordinary type locker bottoms.

FM50-4



3

LONG LIFE because of channel frame construction . . . 16 gauge steel, top, bottom and side frame members ensure rigidity and added strength. All parts electrically welded into solid square frame to assure proper fitting of door.



4

ADJUSTABLE LEGS that can be raised or lowered to compensate for unevenness of floor. Legs are correctly spaced every two or three lockers (depending on locker width) to facilitate cleaning under lockers.

5

STYLING . . . for efficiency and modern streamlined appearance. Absence of hinge bolt-heads on doors, styling of louvers, handle and legs give Medart Lockers that smart modern "functional" look. Simplicity that bespeaks smooth operation.

MEDART STEEL LOCKERS available in all standard types and sizes . . . either recessed or free standing. Write for descriptive literature . . . Send your plans for suggestions.

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Wire Basket Shelving and Wire Baskets for use where the privacy of Steel Lockers is not required. Write for descriptive literature.

Medart Steel Lockerobes with "Simultaneous Opening - Master Door Control" for elementary school use. Write for descriptive literature.

CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926–1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	*Residential*		*Apts., Hotels Office Bldgs. Brick and Concr.*	*Commercial and Factory Bldgs.*	
	Brick	*Frame*		*Brick and Concr.*	*Brick and Steel*
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1945	160.5	161.7	156.3	158.0	155.4
1946	181.8	182.4	177.2	179.0	174.8
1947	219.3	222.0	207.6	207.5	203.8
1948	250.1	251.6	239.4	242.2	235.6
Dec. 1949	242.4	238.9	241.4	244.5	237.8
Jan. 1950	242.8	239.4	242.3	245.2	241.2
Feb. 1950	244.1	240.9	243.2	245.9	242.0
	% increase over 1939				
Feb. 1950	**97.7**	**96.8**	**86.1**	**84.3**	**86.0**

ATLANTA

Period	*Residential*		*Apts., Hotels Office Bldgs. Brick and Concr.*	*Commercial and Factory Bldgs.*	
	Brick	*Frame*		*Brick and Concr.*	*Brick and Steel*
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1945	132.1	133.9	123.2	122.8	123.3
1946	148.1	149.2	136.8	136.4	135.1
1947	180.4	184.0	158.1	157.1	158.0
1948	199.2	202.5	178.8	178.8	178.8
Dec. 1949	184.5	185.5	178.6	178.1	175.3
Jan. 1950	184.5	185.5	179.2	178.6	177.7
Feb. 1950	185.8	187.0	180.1	179.3	178.5
	% increase over 1939				
Feb. 1950	**115.3**	**125.0**	**89.4**	**84.1**	**88.5**

ST. LOUIS

1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1945	152.8	152.3	146.2	148.5	145.6
1946	167.1	167.4	159.1	161.1	158.1
1947	202.4	203.8	183.9	184.2	184.0
1948	227.9	231.2	207.7	210.0	208.1
Dec. 1949	220.7	218.9	214.6	218.2	215.7
Jan. 1950	220.3	218.4	214.7	218.4	216.5
Feb. 1950	222.7	221.3	215.6	219.0	217.4
	% increase over 1939				
Feb. 1950	**102.1**	**106.8**	**81.6**	**82.8**	**82.7**

SAN FRANCISCO

1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1945	146.2	144.3	144.5	146.8	147.9
1946	159.7	157.5	157.9	159.3	160.0
1947	193.1	191.6	183.7	186.8	186.9
1948	218.9	216.6	208.3	214.7	211.1
Dec. 1949	214.0	208.0	215.7	220.4	215.8
Jan. 1950	213.3	207.0	216.7	220.6	216.9
Feb. 1950	215.3	209.2	217.8	221.4	217.9
	% increase over 1939				
Feb. 1950	**103.9**	**110.7**	**85.5**	**81.6**	**87.0**

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95
(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

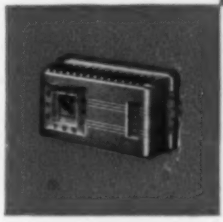
Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.

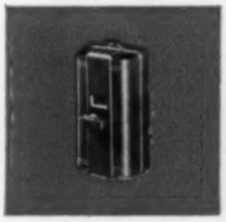
DESIGNED FOR

Comfort?

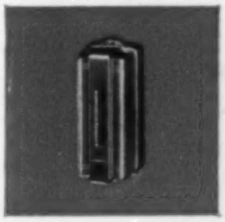
Then remember the best design and all the heat in the world won't make a home comfortable unless it is properly controlled



CHRONOTHERM
ELECTRIC or ELECTRONIC CLOCK THERMOSTAT — Automatically reduces to lower fuel-saving temperature at night and restores daytime comfort in the morning before you arise.



TIME-O-STAT
CLOCK THERMOSTAT — for semi-automatic day-night temperature control. Set it at bed time for lower fuel-saving temperature. Automatically starts your heating plant in the morning.



ACRATHERM
PLAIN TYPE THERMOSTAT— maintains uniform comfort temperature 24 hours a day. Finger-tip dial permits easy setting for lower night temperature. Combines low first cost with precision performance.

YES, control means everything when it comes to heating. And there is a Honeywell control or control system to meet the requirements of every home and every condition of climate. In larger homes, or homes of the ranch type, more than one thermostat may be required to maintain uniform temperature throughout.

Whether you specify the fully automatic Chronotherm, the semi-automatic Time-O-Stat or the plain type Acratherm—all operate on the special "Comfort" principle that maintains practically straight-line temperature under all weather conditions. So, to be sure of maximum comfort, convenience and economy, always specify Honeywell controls.

Use the coupon to get your free copy of the consumer booklet "How to Choose Your Thermostat," which is now being ordered by thousands of families through Home Owners' Catalogs and Honeywell's national advertising.

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2600 Fourth Avenue South **Minneapolis 8, Minnesota**
Please send free copy of booklet "How to Choose Your Thermostat."

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77 BRANCHES FROM COAST TO COAST WITH SUBSIDIARY COMPANIES IN: TORONTO • LONDON • STOCKHOLM • AMSTERDAM • BRUSSELS • ZURICH • MEXICO CITY

REQUIRED READING

IN SUMMARY . . .

European Architecture in the Twentieth Century. Vol. 1. By Arnold Whittick, Published by arrangement with the incorporated Association of Architects and Surveyors. Crosby Lockwood & Son, Ltd. (39 Thurloe St., London S. W. 7) 1950. 7¾ by 9⅞ in. xx + 249 pp. illus. 30s.

The first of a three-volume history (volumes II and III to be published) of *European Architecture* spans the years 1900 and 1924, is divided into two parts. "In part one," says author Whittick, "it is my purpose to give a general idea of the architectural background at the beginning of the century and to review the principal developments before the First World War." A broad treatment of the main European trends begins the book (Part I: Historical Background and the Early Years of the Century), then narrows into more detailed analysis at 1914's onset (Part II: Transition from War to Peace).

"To explain the history of architecture we must study techniques of building construction and social purposes for which the buildings are erected to serve." Whittick has sought for explanations of changes in the appearances of buildings mainly in the developments of the craft of building, the science of construction and the satisfaction of social needs. He convincingly knits into his history the political, sociological and economic influences in architecture.

Mr. Whittick summarizes traditions in the beginning of his work, describes the search for a style — l'Art Nouveau — that culminates in an expression or at least endeavor towards simplicity. He then goes on to new aspects of construction — iron, reinforced concrete, steel, etc. He talks of architecture and social progress, housing developments, garden and industrial cities, and finally winds up with The Foundations of a New Architecture.

Rebuilding in the wake of war devastation, urban overcrowding and resulting planned expansion, experiments in house construction comprise the first chapters in the second part. The last seven chapters are divided roughly in two categories which may be headed "tradition" and "functionalism." Tradition, romanticism, simplicity and originality are dealt with in three chapters; functionalism, new forms and experiments in the remaining. The architectural examples from representative Europe are diversified; he includes ecclesiastical and industrial buildings.

Besides giving a commendable historical analysis, Mr. Whittick has compiled a fine architectural "who's who" — to which might be added — *and why*. His roster includes such names as Labrouste, Schinkel, Persius, Voysey, Webb, Shaw, Behrens, Van der Velde, Horta, to mention but a few.

The volume is as well executed in format as content. In addition to numerous plates, there are drawings and plans, to say nothing of complete index and bibliographies.

KITCHEN PLANNING

Handbook of Kitchen Design. A Report of an Investigation in Space Use conducted by the University of Illinois Small Homes Council and Agricultural Experiment Station. Technical Series. Index Number C5.32R. Issued by the Small Homes Council, University of Illinois (Urbana, Ill.) 1950. 8¾ by 10 13/16 in. 73 pp. illus.

Here is a useful handbook — a guide to designing small kitchens. It presents diagrams for kitchen assemblies which fulfill both planning and storage requirements while making use of factory-made kitchen equipment.

The kitchen plans, which show more storage cabinets than are found in many small homes today, may, according to the Small Homes Council, be liable to criticism on the ground of extravagance. Two factors of space and equipment must be balanced to achieve a well-planned, economical kitchen.

The familiar types of assemblies are cited: one-wall, corridor, "L," "U," Broken "U," as well as separate "work centers." Because plans for the ideal kitchen hinge primarily on window and door location, area, shape, and required storage, each of the 30 sheets gives, according to three basic plans — one each for "liberal," "medium" and "limited" storage. Most sheets also show variations for these plans.

A discussion of Planning Standards precedes the work sheets. Considered here are work centers and their sequence; counters; size and clearance of, and distance between appliances. In addition, the book contains score sheets for judging kitchen designs.

Handbook of Kitchen Design is intended primarily for the architect and builder of low and moderate cost houses.

FROM SWEDEN

Swedish Cooperative Union and Wholesale Society's Architect's Office. Part I, 1935–1949. Part II, Housing 1925–1949. Edited by Kooperativa Förbundets Arkitektkontor. Trans. by William Cameron. Kooperativa Förbundets Bokförlag (Stockholm) 1949. 8½ by 11¼ in. Part I, 164 pp. illus. Part II, 191 pp. illus. 18 Sw. Kroner.

The Architect Office of the Cooperative Union, organized in 1924 as an architects' collective, has published in these two volumes a collection of pictures of buildings which have been put up to serve the Swedish Cooperative Movement. The buildings represented were erected between the end of World War I and 1949. They include houses, shops, restaurants, department stores, industrial buildings, warehouses.

Where Part II is limited to housing, Part I is concerned with other types of construction. Each includes a defining essay — the first on Cooperative Architecture; the second on the Aims and Activities of the cooperative pioneers.

In addition to photographs of housing (single houses, housing units, etc.), Part II has a good bit of text. Developed here are "Space Considerations in the Home," a section on furniture, Stockholm housing competitions, several housing projects built for the Swedish cooperatives and combined shop-living quarters (the dwelling in the shop building; the shop in the flat block).

Photographs, drawings, plans in each volume are numerous; extensive use of color enhances the books, lends a buoyant Scandinavian touch to well-presented subject matter.

NEW EDITIONS

TRELLISES AND TEAHOUSES

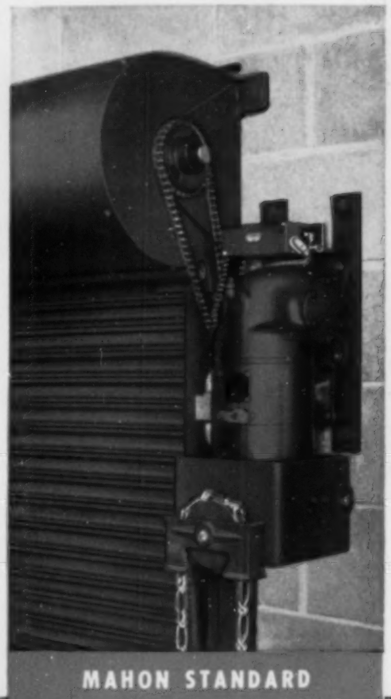
Chinese Houses & Gardens. By Henry Inn. Edited by Shao Chang Lee. Rev. Ed. Hastings House. (41 East 50th St., New York 22, N. Y.) 1950. 9¼ by 12¼ in. xii + 148 pp. illus. $10.00.

In format and content the second edition of *Chinese Houses & Gardens* is very similar to the first (1940) with its 147 photographs, 113 line drawings and text which includes treatises on Chinese philosophy and culture.

Part I contains articles by prominent

(*Continued on page 30*)

Rolling Steel DOORS



MAHON STANDARD POWER OPERATOR 920-P

Manually, Mechanically, or Power Operated

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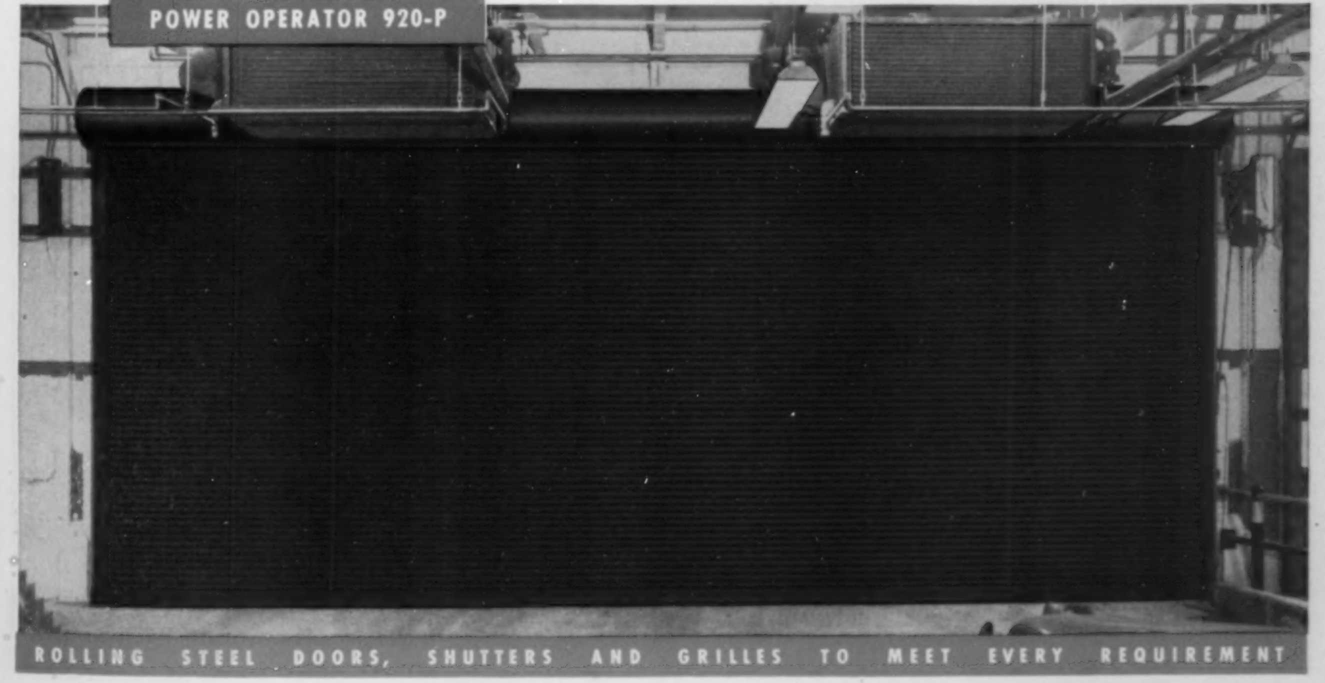
Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls, Steel Deck for Roofs, Partitions, Acoustical Ceilings, and Permanent Concrete Floor Forms.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Mahon Power Operated Rolling Steel Door installed in an opening 37' 0" x 14' 9". A total of seventy-six Mahon Rolling Steel Doors are installed in this midwestern industrial plant.

MAHON

Heats one room, suite or building!

NEW STEWART-WARNER

"SAFETY-SEALED" HEATING UNIT!

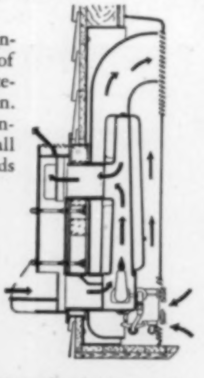
This adaptable new "packaged" unit solves your most difficult heating problems with new ease and dependability. Stewart-Warner's "Safety-Sealed" Saf-Aire unit is a completely automatic, independent gas heating system. Versatile in application, this compact unit provides safe, reliable heat for an entire building, remote zone, or a single hard-to-heat room.

No closet, floor or basement space is wasted. No chimney, ducts or electricity are required for installation in any exterior wall of wood, brick, stucco or cement-block construction.

Exclusive "Safety-Sealed" construction *seals* all combustion air and products from contact with heated room air. The patented exterior wall vent draws in *outside* air for combustion, then vents all combustion products outside *through the wall!*

Now available with manual or thermostat control, Saf-Aire operates on natural, manufactured or LP gas. Has *no moving parts* to maintain or replace. WRITE NOW FOR COMPLETE, FREE SPECIFICATIONS!

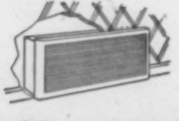
SAF-AIRE fits easily into any exterior wall of wood, brick, stucco or cement-block construction. Interior wall panel connects directly to the small exterior wall vent. Needs no chimney, ducts or electricity!



Model 991-14
14,000 BTU/HR
18" x 24" x 4"

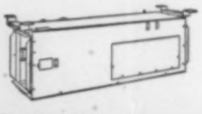
Model 992-20
20,000 BTU/HR
18" x 38½" x 4"

These Stewart-Warner Heaters are "Safety-Sealed," too!



South Wind Zone Heating System

Installed in any inside or outside wall. Single or double grille units. Two suitcase-size units heat average home. Automatically modulated flow of heat. Thermostat control.



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Approved by American Gas Association

STEWART *Safety Sealed* WARNER
DOMESTIC HEATING

STEWART-WARNER CORPORATION
South Wind Division • 1516 Drover Street • Indianapolis 7, Indiana

REQUIRED READING

(*Continued from page 28*)

Chinese: two architects, an historian and professors of philosophy and Chinese culture. Part II is composed of Mr. Inn's photographic illustrations and drawings.

Its value to the reader, states Edgar Schenk in his introduction, is twofold — "the war in the Far East has given the book importance as a record of architecture and gardens which are gone forever . . . through it the Western reader can see and understand a relationship between house and garden which for two hundred years has influenced, in one way or another, our own home and garden planning."

Such a record of now obliterated Chinese architectural and landscape material so carefully compiled by author Inn and editor Lee may be considered as a source book and useful addition to anyone's library.

SQUARES AND LOGS

Inskip's Tables. Squares and Logarithms. In Three Parts. By George D. Inskip. Berzinskip (1769 East 19th St., Brooklyn, N. Y.) 1949. 5½ by 8½ in. Part I, 665 pp.; Part II, 144 pp.; Part III, 510 pp. Parts I & II, $7.50. Part II, $4.50. Complete Tables (Parts I, II & III in one volume), $11.00.

The new edition of tables of squares and logs, divided into three parts, includes (Part I) squares and logarithms by 32nds of inches to 170 feet. Logarithmic trigonometric functions, logarithms of numbers and other tables are contained in Part II. The last section gives tables of coordinates and slopes (solutions of right angled triangles for any bevel); roof formulae and graphics for hip and valley construction.

A unique feature of the tables of logarithms is the computation of circular arcs as a one-step operation, by means of a special card device that accompanies each book.

WELDING

Welding Handbook. Third edition. Prepared under the direction of the Welding Handbook Committee. American Welding Society (33 West 39th St., New York 18, N. Y.) 1950. 6¼ by 9⅛ in. x + 1651 pp. illus. $12.00.

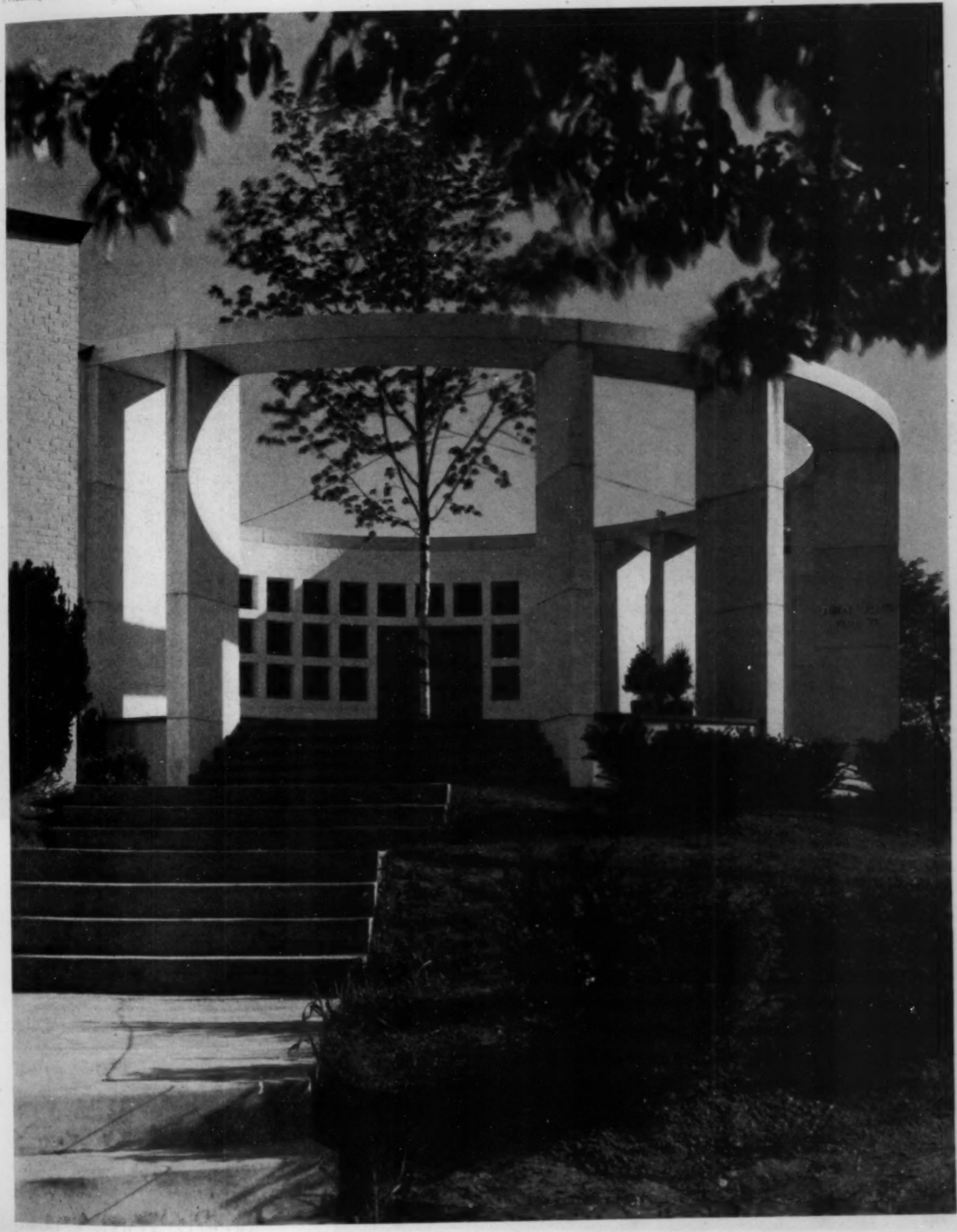
The third illustrated edition covers welding and cutting processes currently in industrial use. The welding of ferrous and non-ferrous metals and alloys, welding metallurgy, the physics of welding, A.W.S. standards, etc. are included.

SITE AND SYMBOLISM DICTATE DESIGN

Southern Brookline Community Center—Temple Emeth, Brookline, Mass.

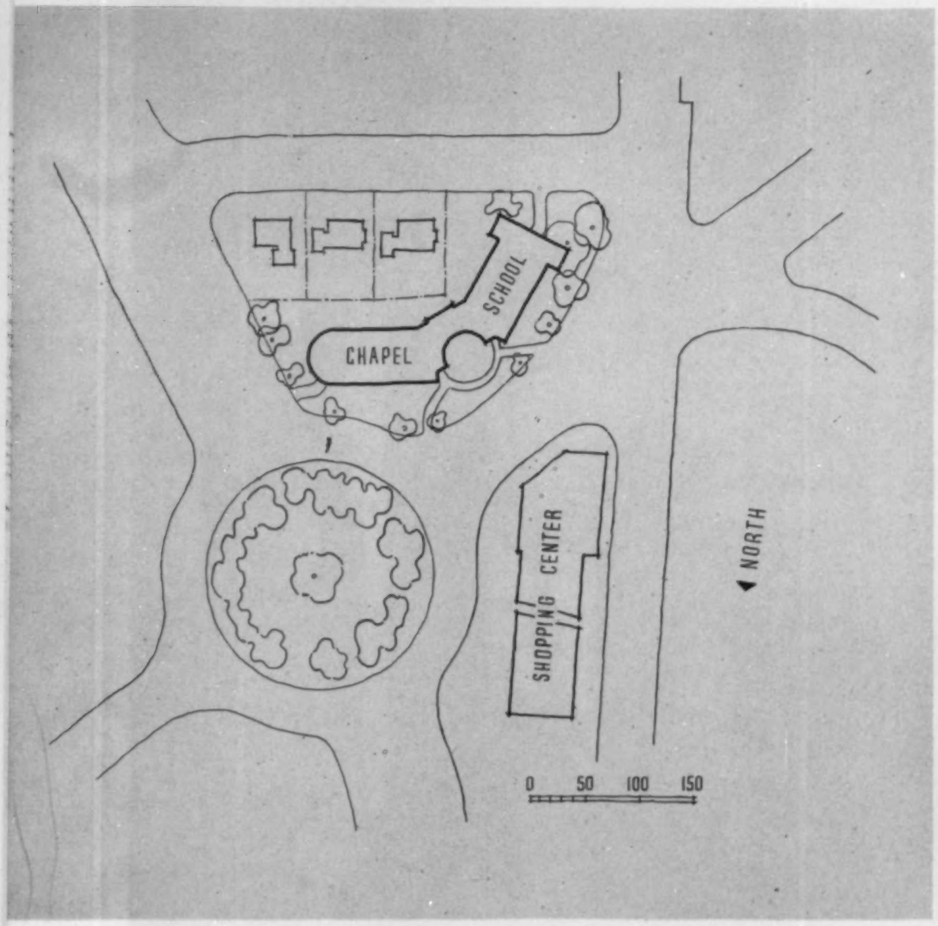
Isidor Richmond and Carney Goldberg, Architects

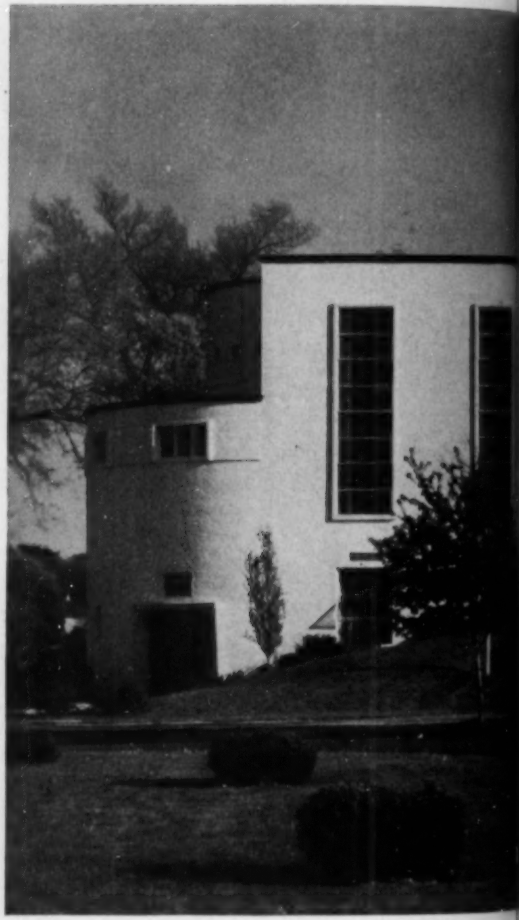
Haskell Photo



ANYONE walking or driving along any of the seven approaches to Temple Emeth has his attention immediately drawn to the graceful open court which is the Temple's heart. That focal point was determined by architects Richmond and Goldberg after careful study of the various approaches; about it the entire plan of the building was organized, with the chapel wing reaching, as liturgy required, to the east, and the school wing stretching to the southwest. Linking the two are the administrative and Rabbi's offices. All are entered directly from the court.

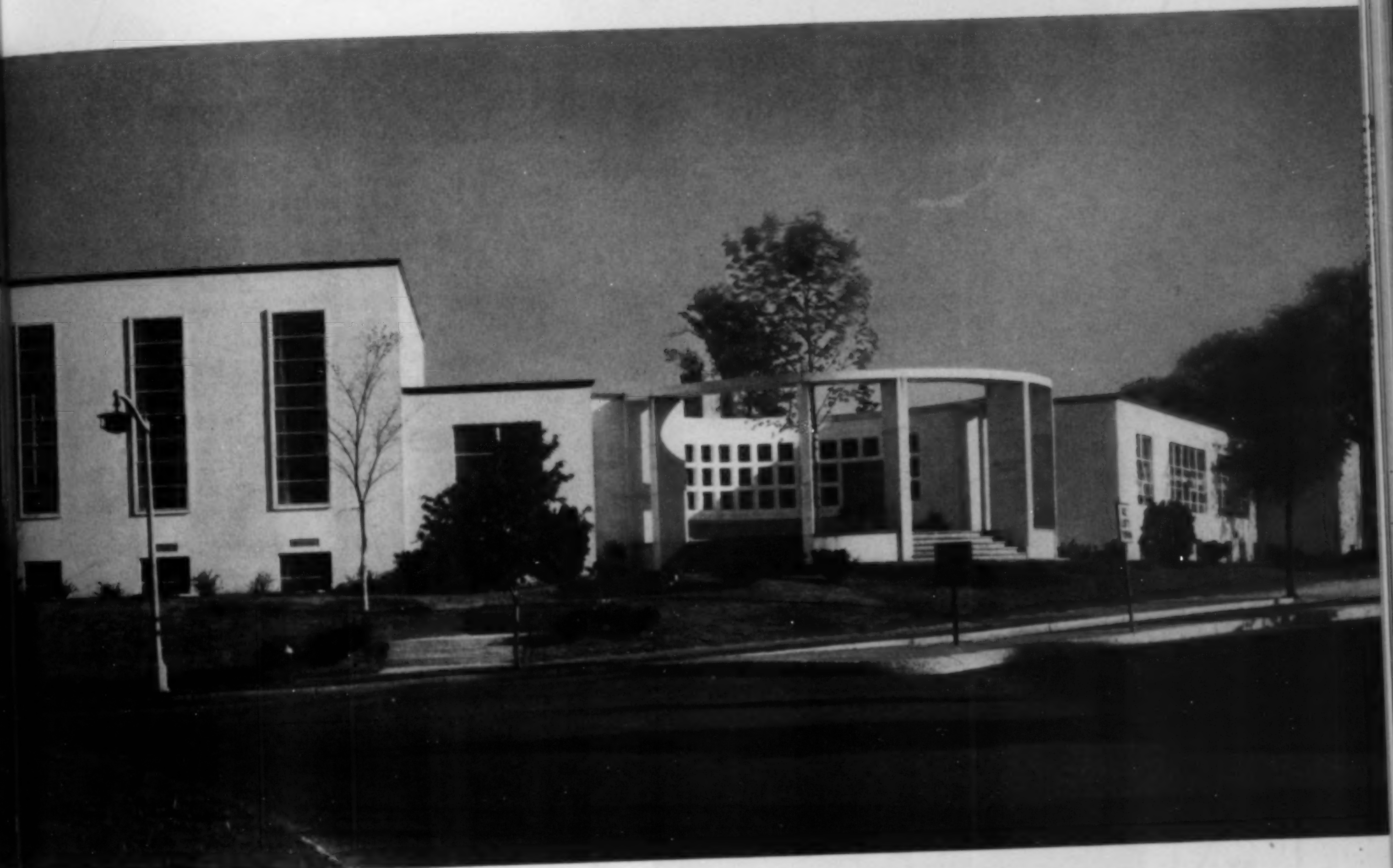
The natural slope of the site was used to give the vestry, located below the chapel, its own entrance from the parkway to the east. Because the vestry may be rented for weddings, receptions, etc., it is planned so that it can be locked off from the rest of the building but still have free access to kitchen and coat rooms (see plans, page 104).





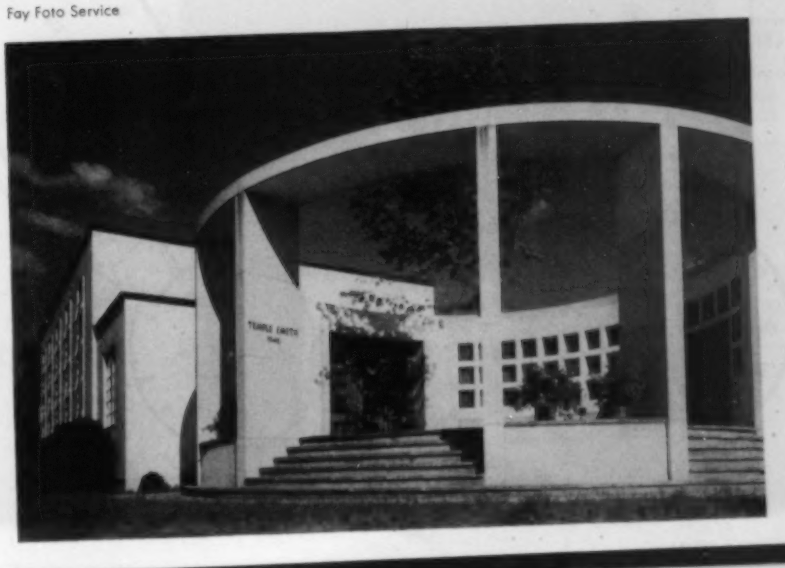
Exterior of the building is common brick, painted, and backed up with cinder concrete units. Floors in chapel and classrooms are reinforced concrete beam and slab.

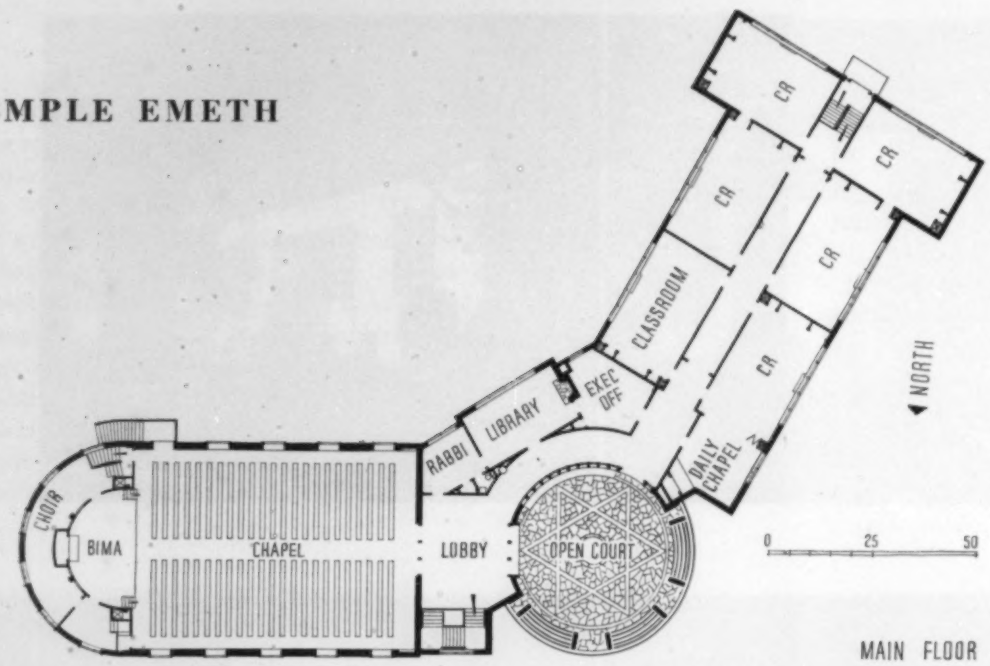
Haskell Photos



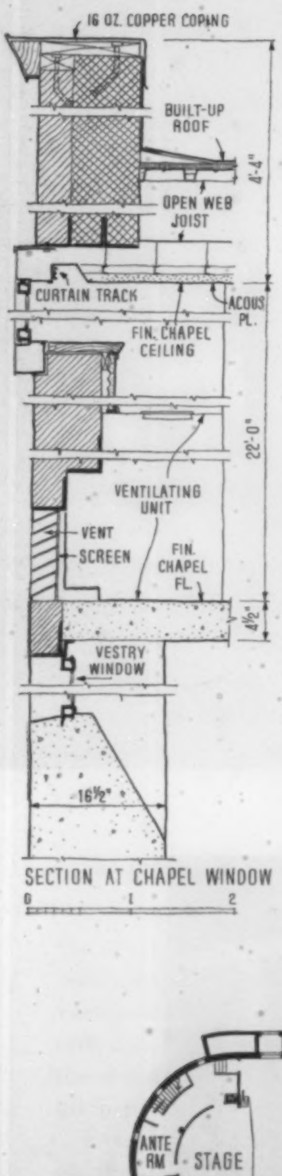
Fay Foto Service

The rotunda, Rabbi Zev Nelson of Temple Emeth explains, conveys the message that "religion embraces the whole round globe"; the tree in its center is the tree of life; the 39 small windows represent the 39 books of the Bible from Genesis to Chronicles. The 10 large windows of the Chapel symbolize the Ten Commandments




CR
CR
CR
CR
CLASSROOM
CR
EXEC OFF
LIBRARY
RABBI
DAILY CHAPEL
NORTH
CHOIR
BIMA
CHAPEL
LOBBY
OPEN COURT
0
25
50

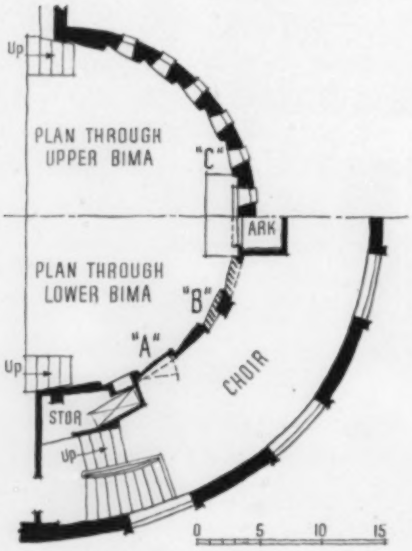
MAIN FLOOR

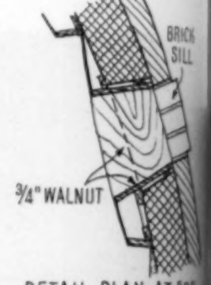

16 OZ. COPPER COPING
BUILT-UP ROOF
4'-4"
OPEN WEB JOIST
CURTAIN TRACK
ACOUS PL.
FIN. CHAPEL CEILING
22'-0"
VENTILATING UNIT
VENT
SCREEN
FIN. CHAPEL FL.
4½"
VESTRY WINDOW
16½"

SECTION AT CHAPEL WINDOW

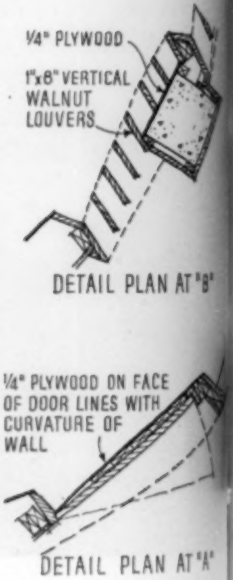
0
1
2

Plans were worked out to give all parts of building direct access from entrance court and yet to segregate various activities. Semi-circular bima in chapel and enclosed choir posed unusual problems in acoustics. Curved wall surface was broken up into panels for sound control (as in radio studio design) and vertical louvers were set in on either side of Arc to permit choir to be heard (details at right, photos opposite). Chapel seats 560


Up
PLAN THROUGH UPPER BIMA
"C"
ARK
PLAN THROUGH LOWER BIMA
"B"
"A"
Up
CHOIR
STOR
Up
0
5
10
15


BRICK SILL
3/4" WALNUT

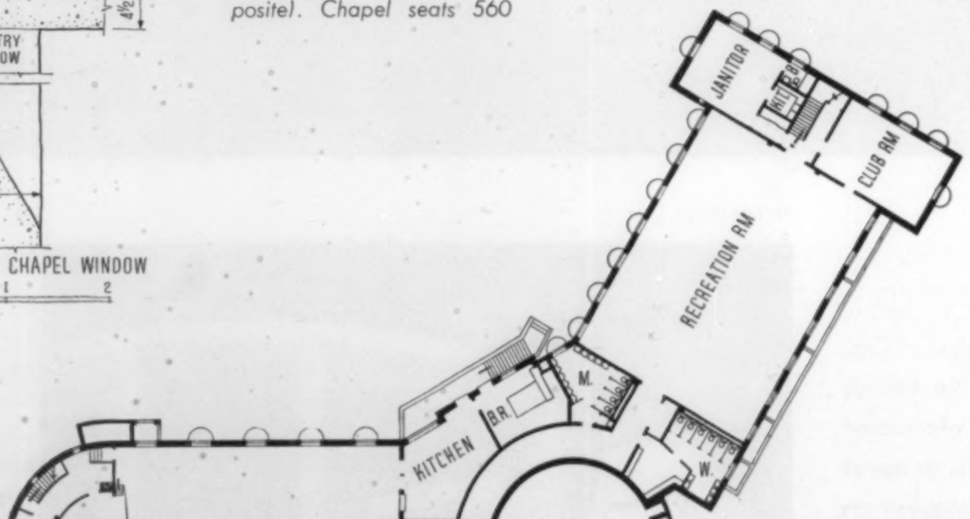
DETAIL PLAN AT "C"


1/4" PLYWOOD
1"x8" VERTICAL WALNUT LOUVERS

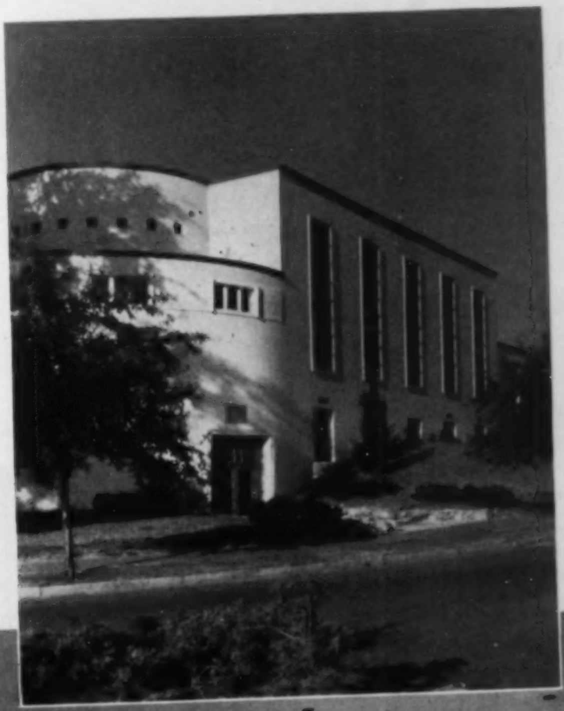
DETAIL PLAN AT "B"

1/4" PLYWOOD ON FACE OF DOOR LINES WITH CURVATURE OF WALL

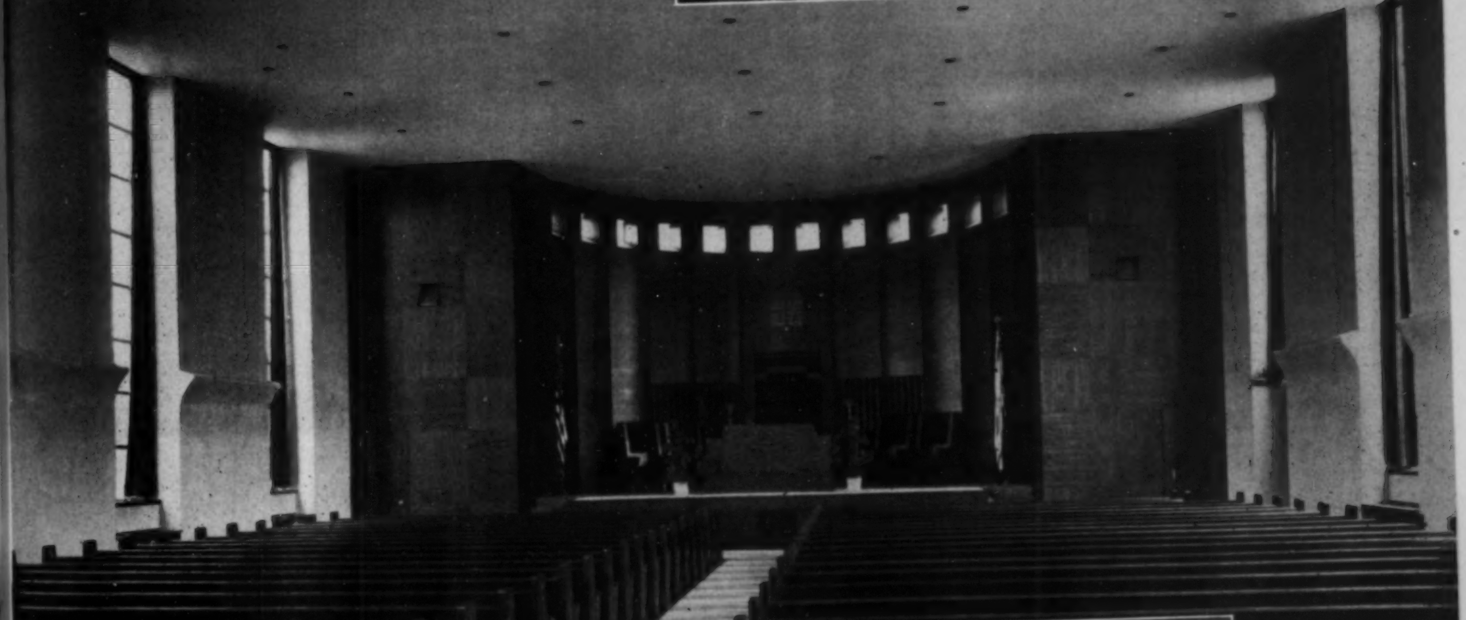
DETAIL PLAN AT "A"

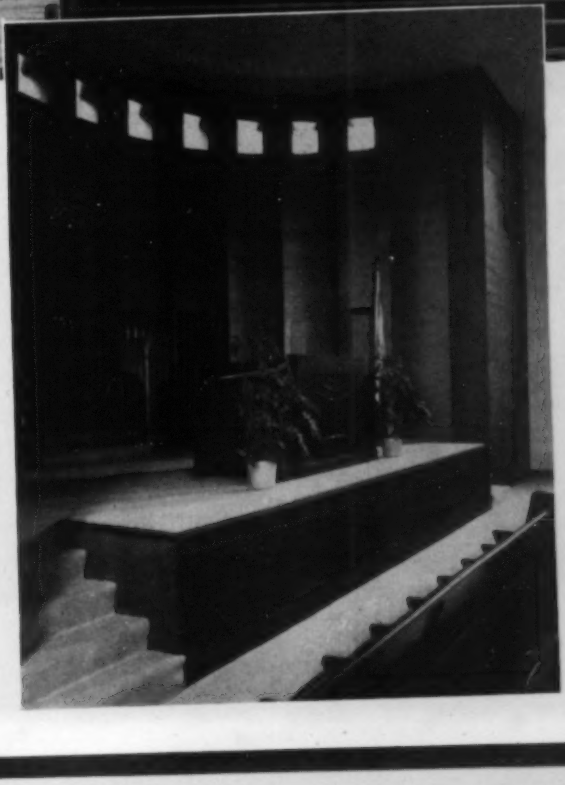

JANITOR
CLUB RM
RECREATION RM
M.
BR.
KITCHEN
W.
ANTE RM
STAGE
COATS
VEST.
VESTRY
LOBBY
COATS
UNEXCAVATED
0
10
20
30
40
50

GROUND FLOOR



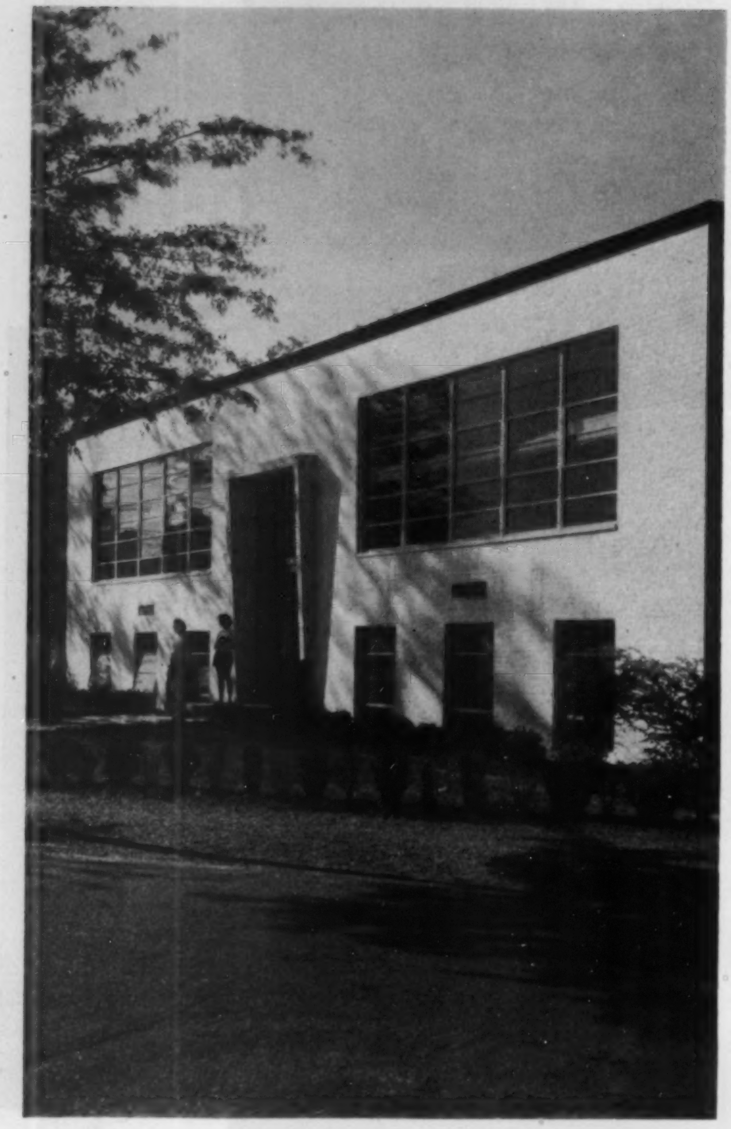
Haskell Photos



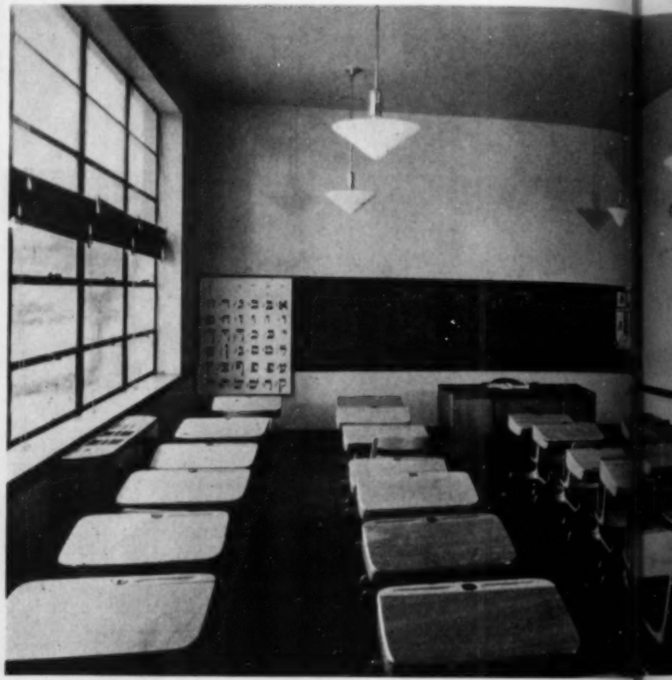


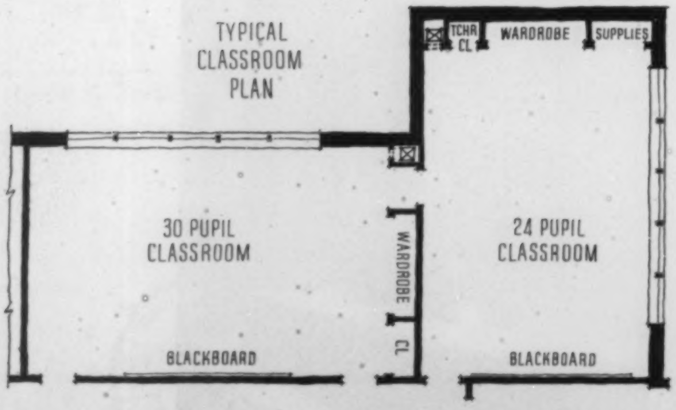
The chapel has no projecting lighting fixtures; ceiling is light-studded and washed with indirect light from troughs between the windows along side walls. Paneled walls of the bima are walnut, stained and waxed. The 12 windows above Arc represent the 12 tribes of Israel

TEMPLE EMETH



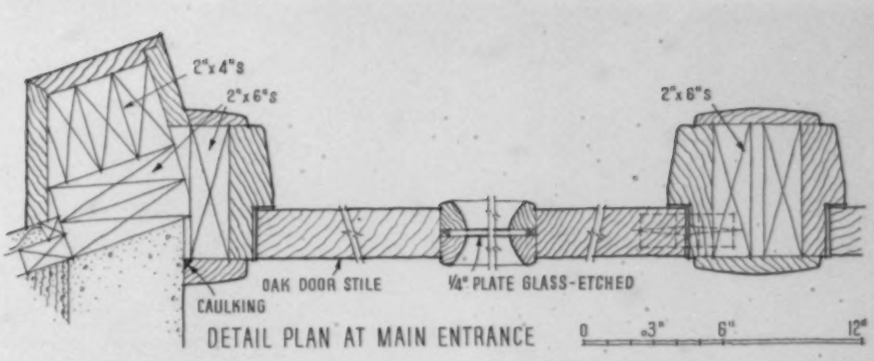
Haskell Photos




TYPICAL CLASSROOM PLAN
TCHR CL
WARDROBE
SUPPLIES
30 PUPIL CLASSROOM
WARDROBE
CL
24 PUPIL CLASSROOM
BLACKBOARD
BLACKBOARD

The Southern Brookline Community Center — Temple Emeth is a Jewish religious-cultural organization which considers the school almost as important as the chapel. The school wing provides (see plans, page 104) six classrooms, each with its own wardrobe. There are two pairs of classrooms capable of seating 30 pupils each; folding partitions between them can be opened to convert each pair into a single large room. The two smaller rooms seat 24 pupils each. In addition, the two clubrooms on the lower floor of the school wing also may be used for classes.

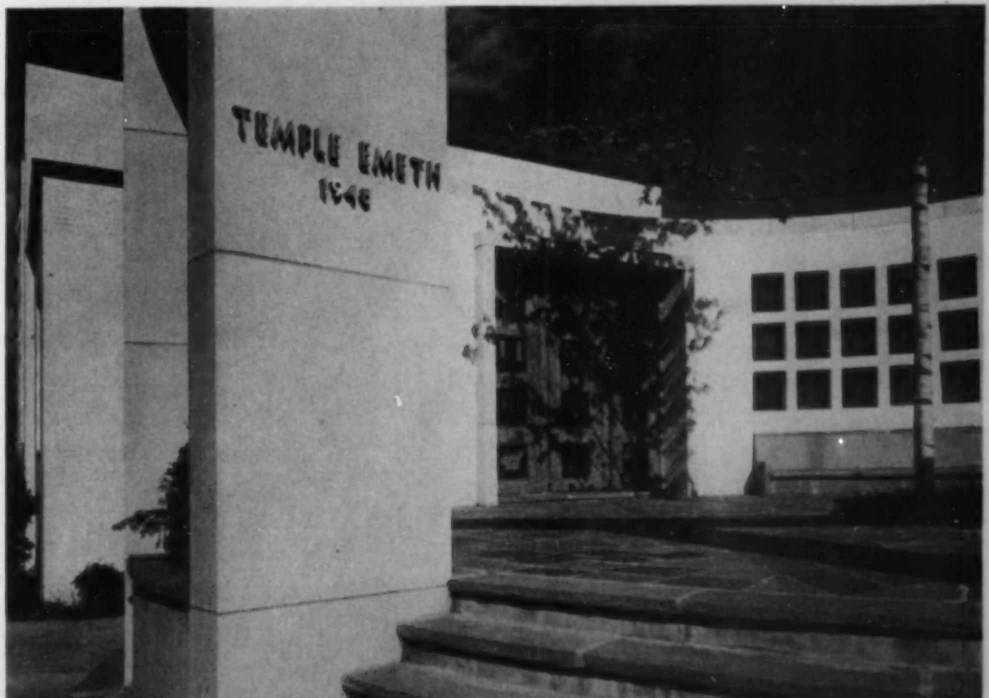
Temple Emeth won for its architects (Architectural Record, Feb. 1950, p. 11) the Harleston Parker Medal for 1949, presented by the mayor of Boston for "the piece of architecture within the limits of the City of Boston" judged the most beautiful by the Boston Society of Architects.


2"x 4"s
2"x 6"s
2"x 6"s
CAULKING
OAK DOOR STILE
1/4" PLATE GLASS-ETCHED
DETAIL PLAN AT MAIN ENTRANCE
0
3"
6"
12"

Haskell Photos

Main doors to chapel (below) depict the holidays of the Jewish calendar year. Detail above is one quarter of vertical panel at left in photo, below, of entrance court

Fay Foto Service

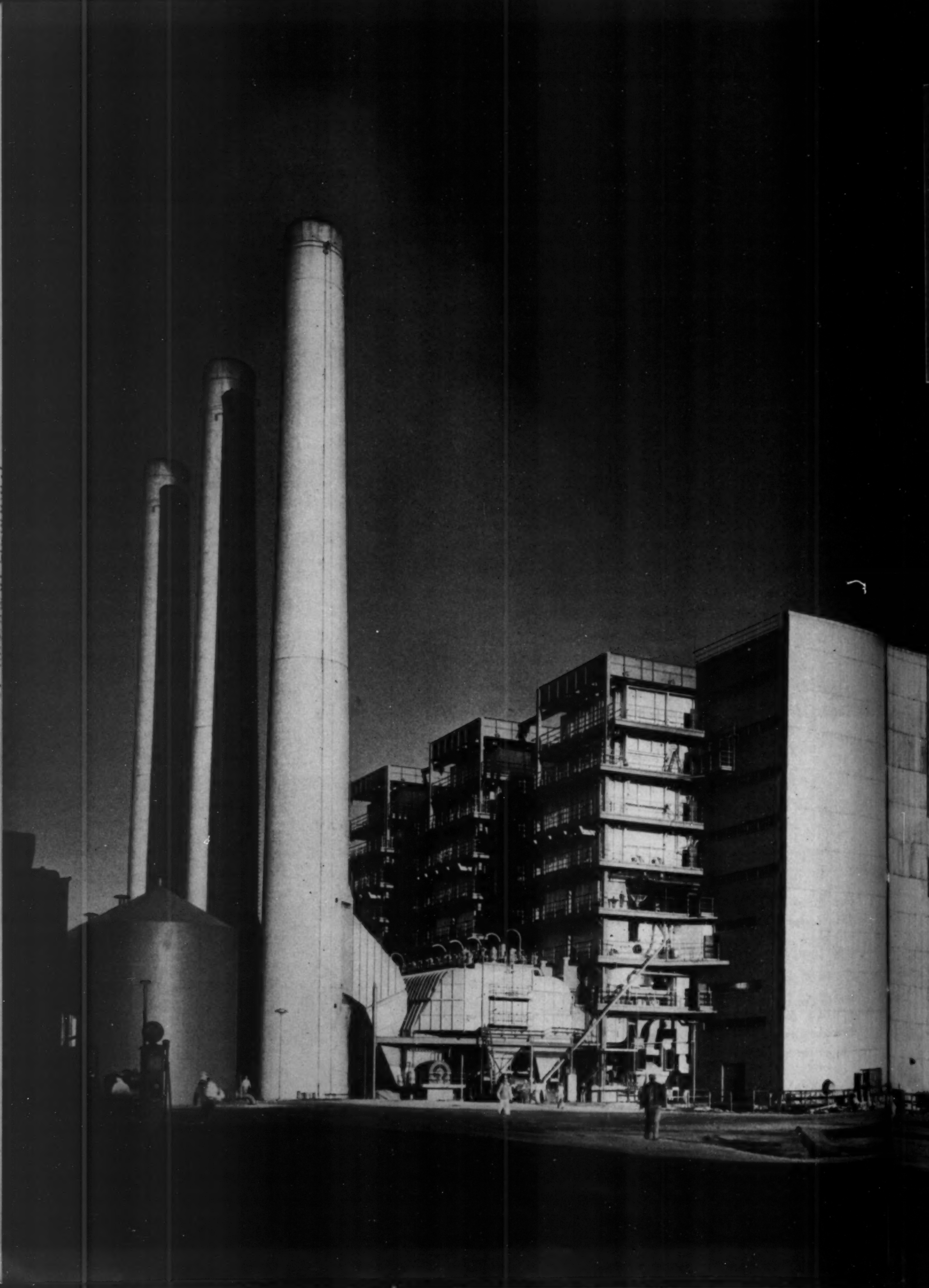

TEMPLE EMETH
1948

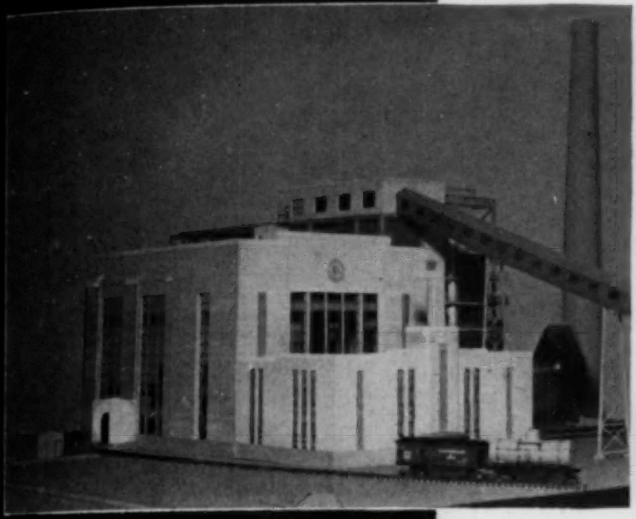
John J. Harty

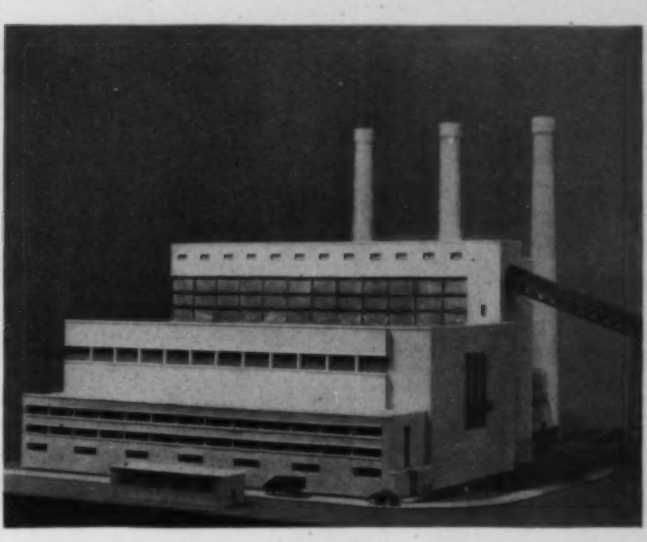
Structural Engineer

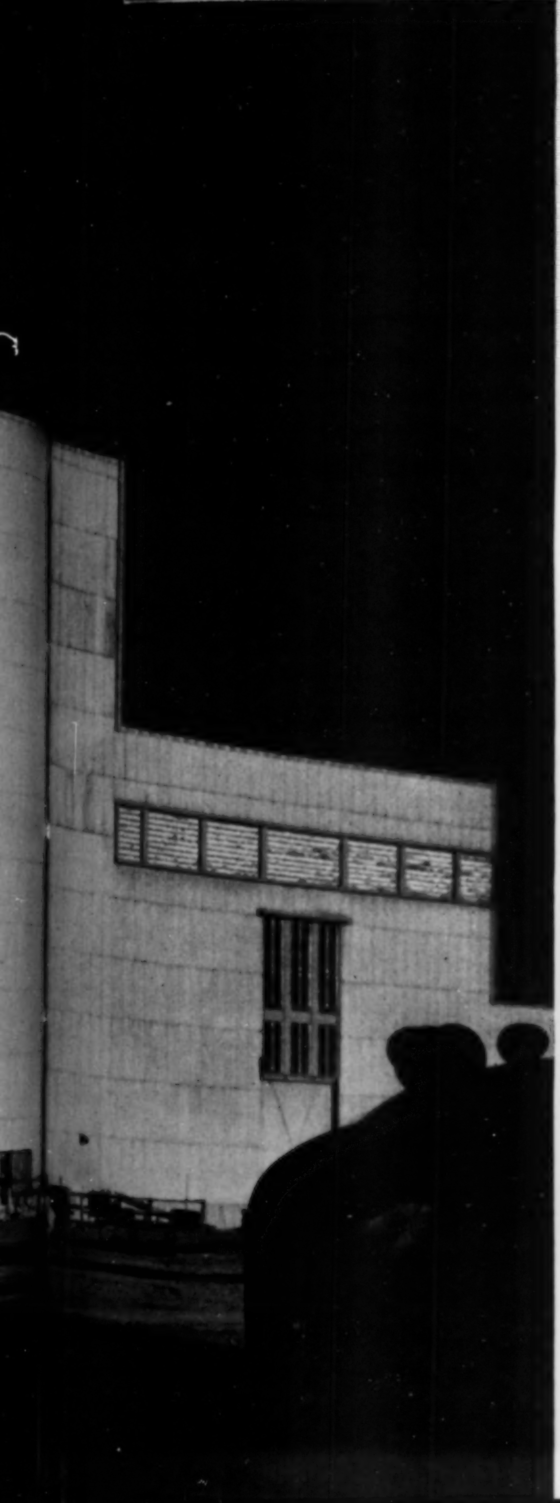
White Construction Co.

General Contractor









Richard Garrison Photo

POWER PLANT PROGRESS

Sewaren Generating Station

Public Service Electric & Gas Company,

Owners and Engineers

Walker & Poor, Consulting Architects

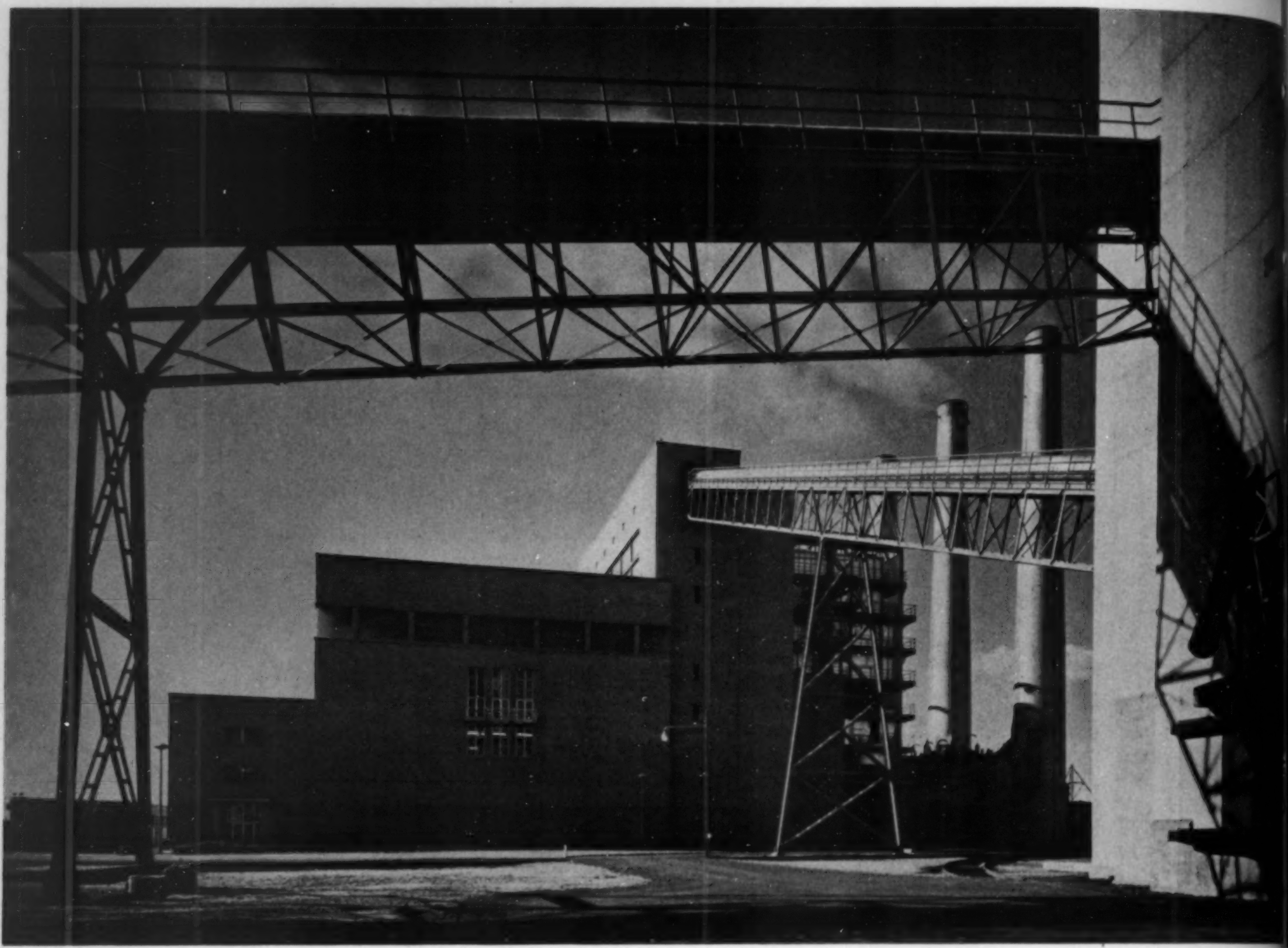
United Engineers & Constructors, Inc., Builders

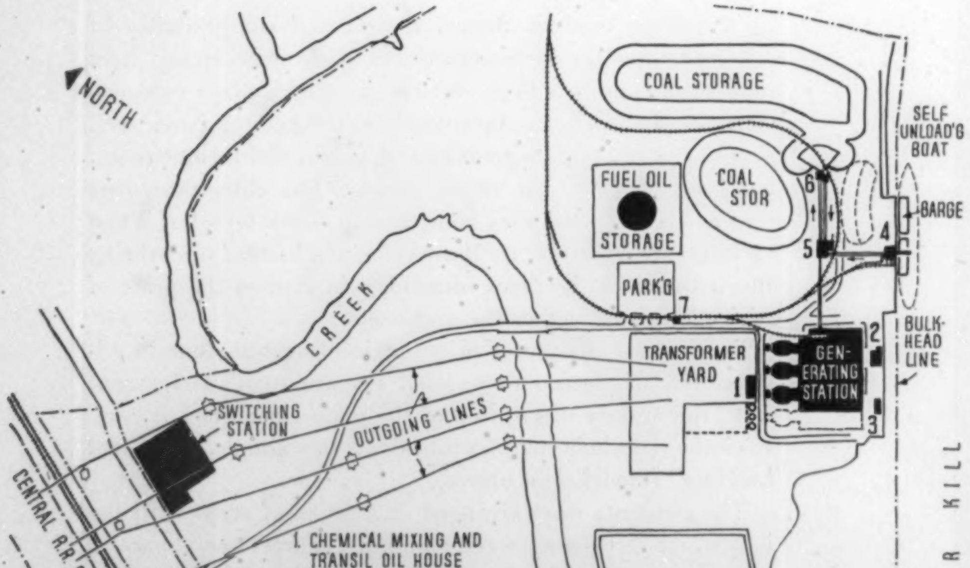
A FAVORITE modern theme, the natural compatibility of contemporary architecture and basic engineering, here finds expression in a huge electric generating plant (see also Corn Products plant, ARCHITECTURAL RECORD, Nov. '49). A power plant, with its great boilers, stacks and turbine room, has good elements for visual interest, but older precedent seems to dictate that they be housed in Greek temples. When architecture begins to use those elements, instead of covering them, the result becomes something to express the pride of the engineers as well as the architects.

In this case the power plant engineering was done in advance (model picture above left). The architect's assignment was "the orderly disposition of the main elements . . . and to clothe the whole complex fabric in a new simple, functional building" (model right above).

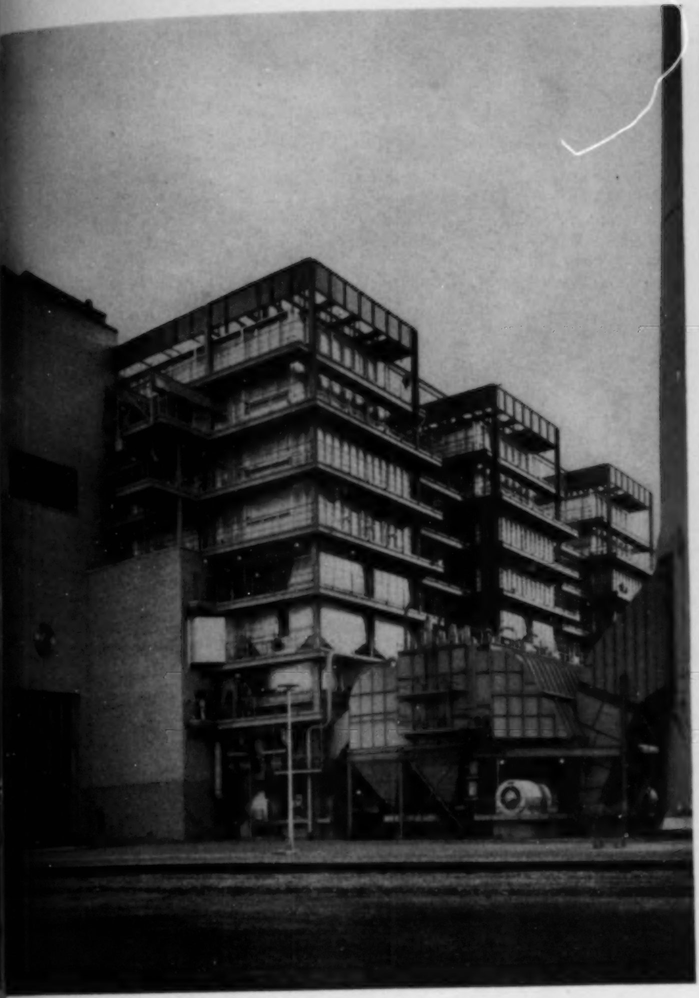
The elements were arranged in a series of steps with the lowest, the three-story service building, nearest to and parellel with the water, turbine room next, then the highest portion, the coal bunker and boiler house. The rear side has the stacks, 225 ft high, for accents (the architects introduced entasis as well as taper).

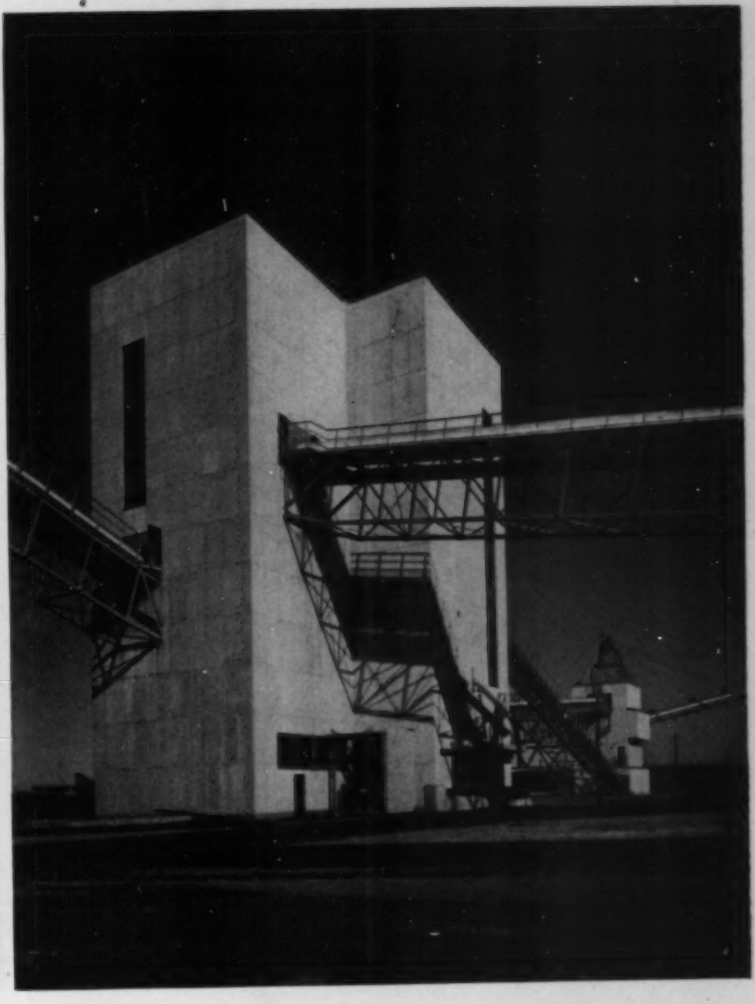
It would have been possible, of course, to continue the building at the rear to enclose the boilers completely. But why build a nine-story building for boilers, and then have to ventilate it against boiler heat, when nature will do it for you?



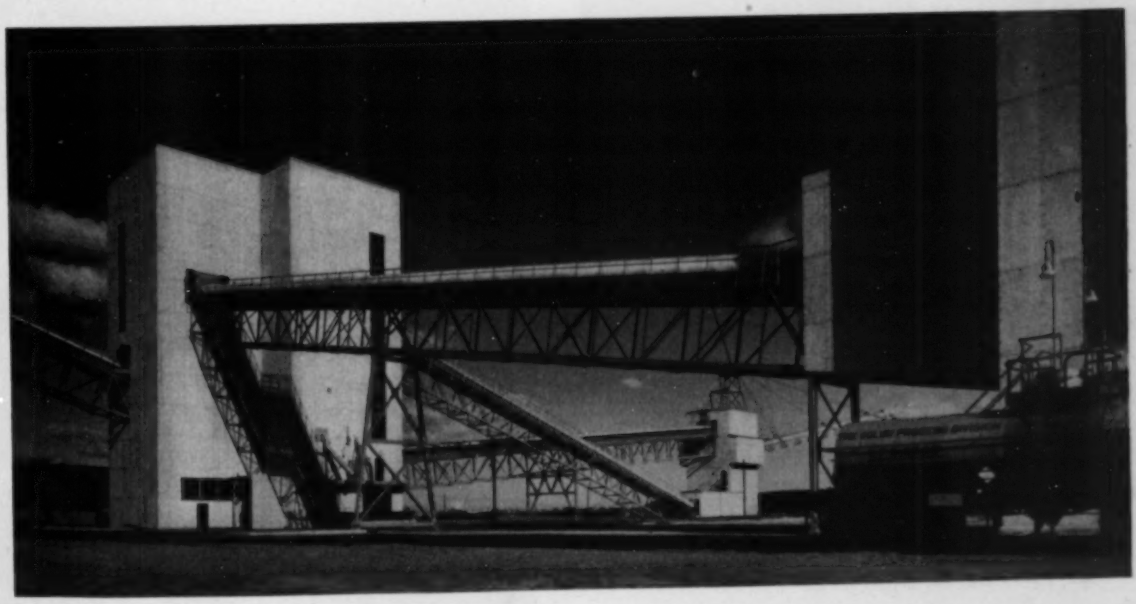

NORTH
COAL STORAGE
SELF UNLOAD'G BOAT
FUEL OIL STORAGE
COAL STOR
BARGE
6
5
4
PARK'G
7
CREEK
BULK-HEAD LINE
TRANSFORMER YARD
GEN-ERATING STATION
1
2
3
SWITCHING STATION
OUTGOING LINES
CENTRAL R.R. OF N.J.
ARTHUR KILL
ASH DISPOSAL AREA
1. CHEMICAL MIXING AND TRANSIL OIL HOUSE
2. SCREEN HOUSE NO. 1
3. SCREEN HOUSE NO. 2
4. COAL UNLOADING TOWER
5. BREAKER HOUSE
6. SWING BOOM TOWER AND RECLAIMING HOPPER
7. GATE HOUSE
0
500
1000

Site for Sewaren Station was 150 acres of salt marsh bordering on Arthur Kill. 55 acres were filled for the station with sand and gravel dredged from the kill. Buildings and machinery are supported on wood pile foundations covered with a concrete mat. The kill provides water transportation for coal and oil; also supplies cooling water for the condensers. At present the station has three 110,000 kw turbine generators; a fourth of 125,000 kw capacity will be added next year. Boilers operate at 1500 psi, 1050 F



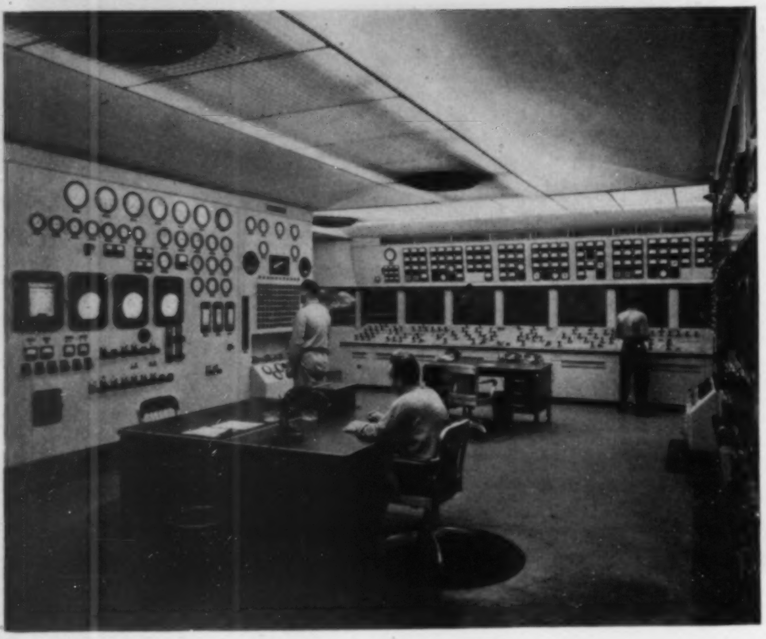


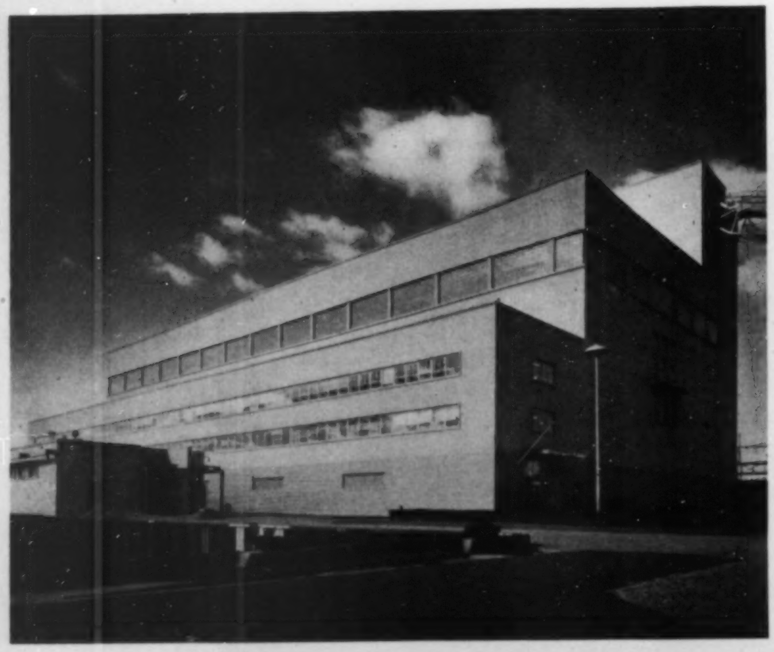
Richard Garrison Photos

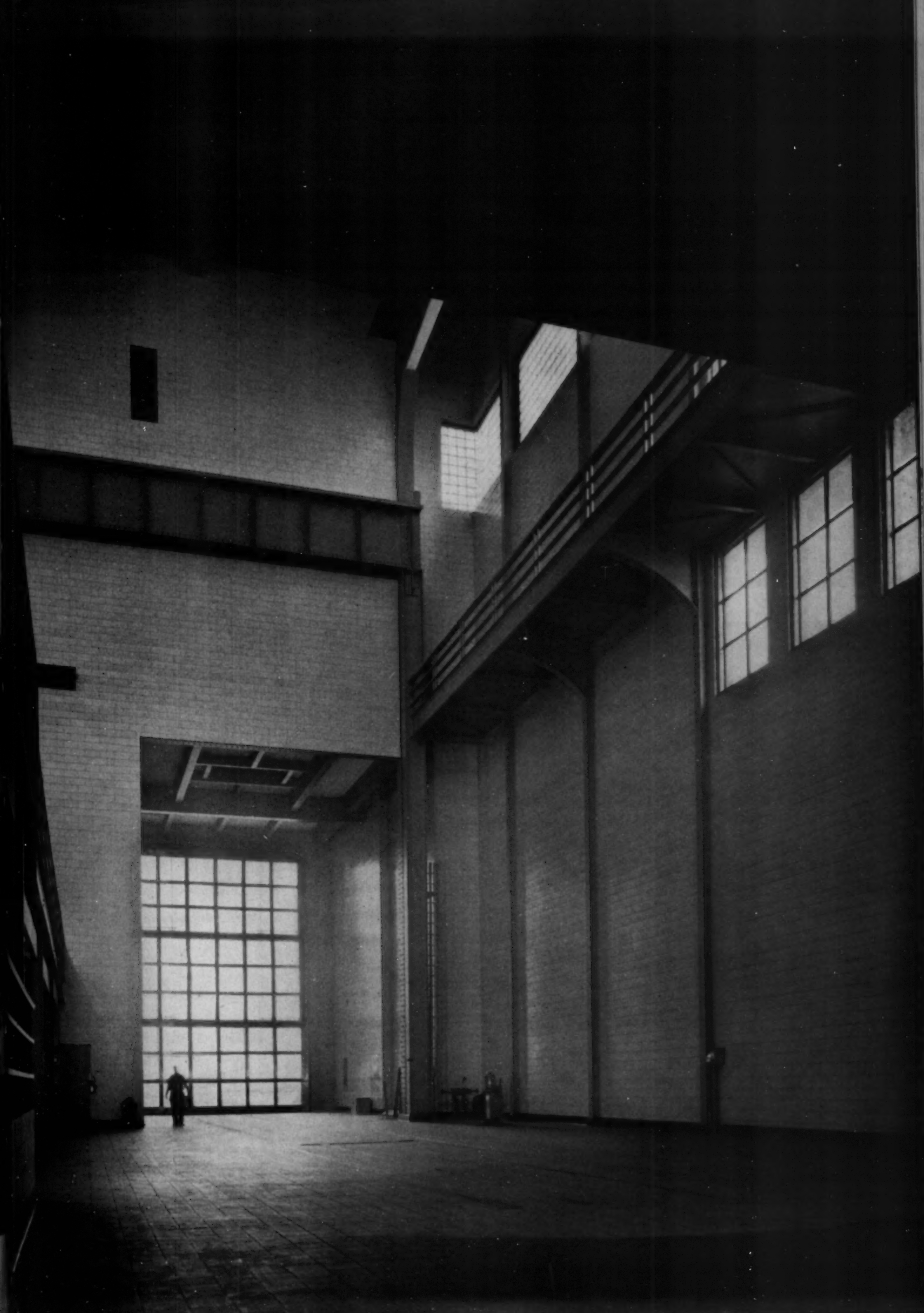


Where outside light was needed it is provided by continuous rows of glass block in the turbine room and continuous sash in the service building. Otherwise the composition uses large unbroken masonry walls. Main building is gray brick, with limestone window surrounds and copings. As low maintenance cost was a factor in design, all sash are aluminum; the large windows in the turbine room, main entrance doors and the large triple-lift door are stainless steel. For ease in cleaning, interior walls in boiler house are 5 by 12 salt glazed tile, in turbine room 8 and 16 gray ceramic tile. Coal handling structures are steel frames covered with flat Transite. Conveyor belts on bridges are sheltered by stainless steel hoods

Richard Garrison Photos







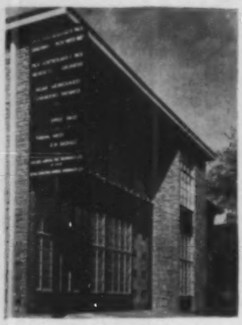
SMALL TEXAS OFFICE BUILDINGS PLANNED FOR UPTOWN SITES

1. *Page, Southerland & Page Building, Austin, Texas*

2. *Thornhill-Craver Office Building, Houston, Texas*

3. *Technical Instrument Co., Houston, Texas*

4. *Remington-Rand Building, Dallas, Texas*

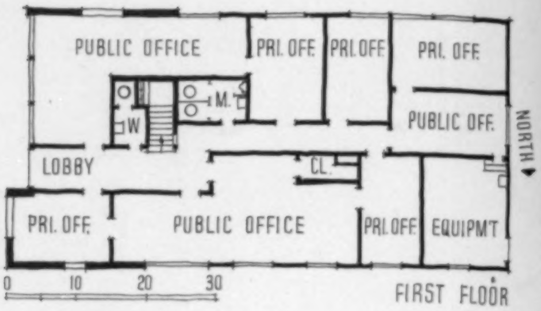

1

3

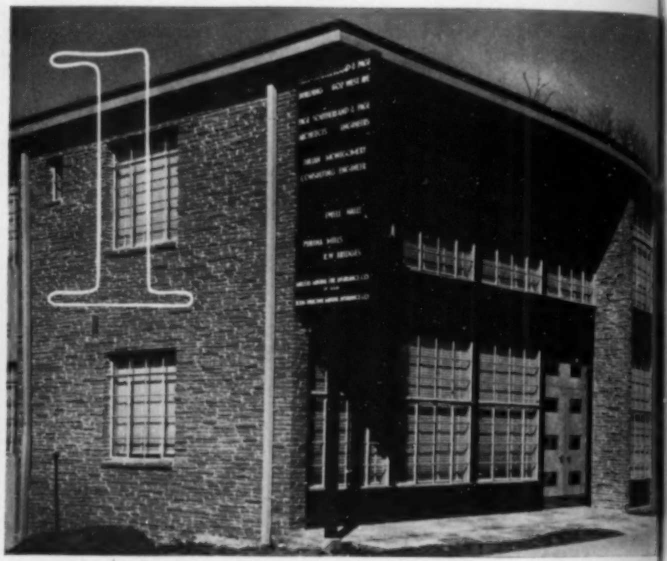
2

4

These four Texas buildings were cited briefly in the January, 1950, Building Types Study. Because of the excellence of their design, it was felt that they deserved a fuller coverage than was possible in the previous article.


PUBLIC OFFICE
PRI. OFF.
PRI. OFF.
PRI. OFF.
W
M.
PUBLIC OFF.
NORTH
LOBBY
CL.
PRI. OFF.
PUBLIC OFFICE
PRI. OFF.
EQUIPM'T
0
10
20
30
FIRST FLOOR

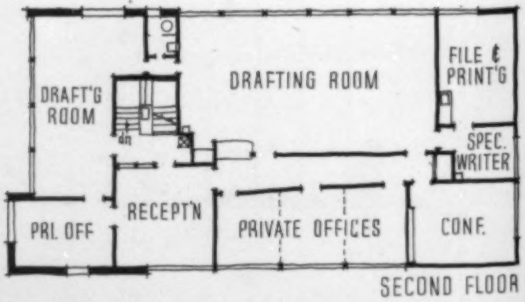
Mears Studio Photo



PAGE, SOUTHERLAND & PAGE BUILDING

Austin, Texas

Page, Southerland & Page, Architects

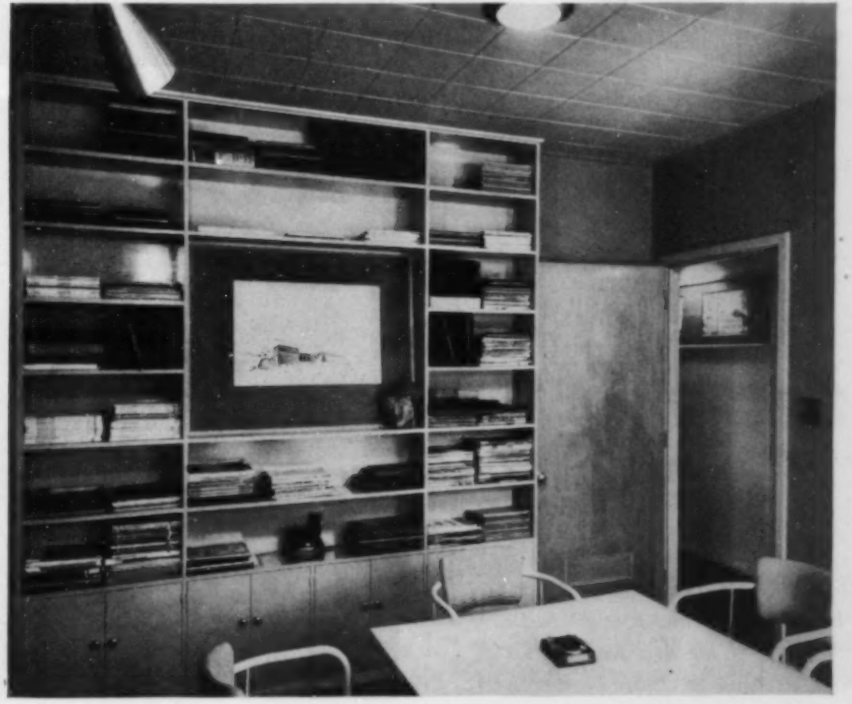

DRAFT'G ROOM
DRAFTING ROOM
FILE & PRINT'G
SPEC. WRITER
PRI. OFF
RECEPT'N
PRIVATE OFFICES
CONF.
SECOND FLOOR

Interiors are finished for ease of upkeep. Entrance hall (right) is staggered behind stairs to avoid shot gun effect. Dropped ceiling in reception room (far right) houses ducts, lights

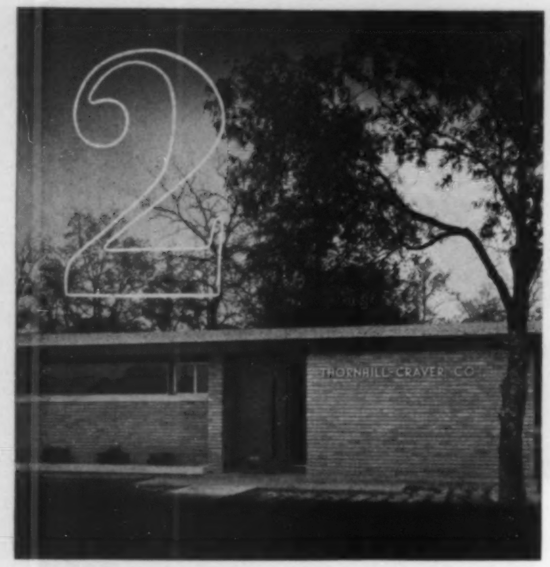
The four buildings presented here represent varying solutions to the problem of housing office and light manufacturing space in less expensive, low density building areas. Planned occupancy varies from a single company to an assemblage of individual offices. Each of the structures is an outgrowth of the principles of planning small office buildings, as given in the January 1950 Building Types Study. Land values were paramount in determining building heights, site coverage and exterior exposure for offices; rental values served to determine location of tenant office spaces. All these buildings have certain features in common: low to moderate cost; ease of maintenance; some use of native materials; and deference to the climate, with air conditioning, insulation and sun shades or blinds. Advertising values for each occupant were carefully considered in the designs. Decorative effects have been achieved in a logical fashion by contrast in building masses and materials.

The Page, Southerland & Page Building was specifically planned to provide quarters adapted to the needs of the architects, which could be amortized for the amount of rent normally paid for a similar space. For economy, the plan was based on a central corridor, flanked by exterior offices. The more rentable first floor was allocated to manufacturers' sales offices and an insurance agency, the second to the designers and an engineering firm with whom they have frequent business. An exterior sign, integrated as a design feature, lists all occupants of the building. The structure is wood frame with ledgestone and stucco exterior, cotton batt insulation. Interiors have acoustical tile and fiberboard ceilings, textured plaster-board walls, asphalt tile on oak floors. Parking space at rear allows future addition.

Studtman Photos



Three private offices are divided by curtains for flexibility: they can be used as extra drafting room, or partitioned for renting. Conference room (right) doubles as completely private work space


2
THORNHILL-CRAVER CO.

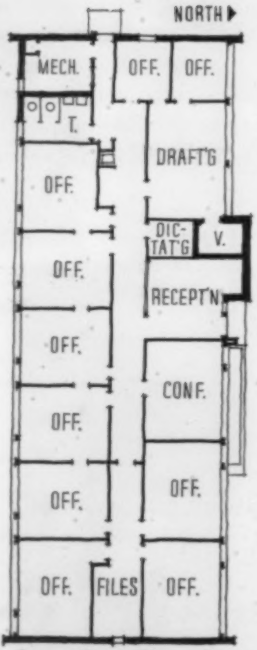
Mears Studio Photos

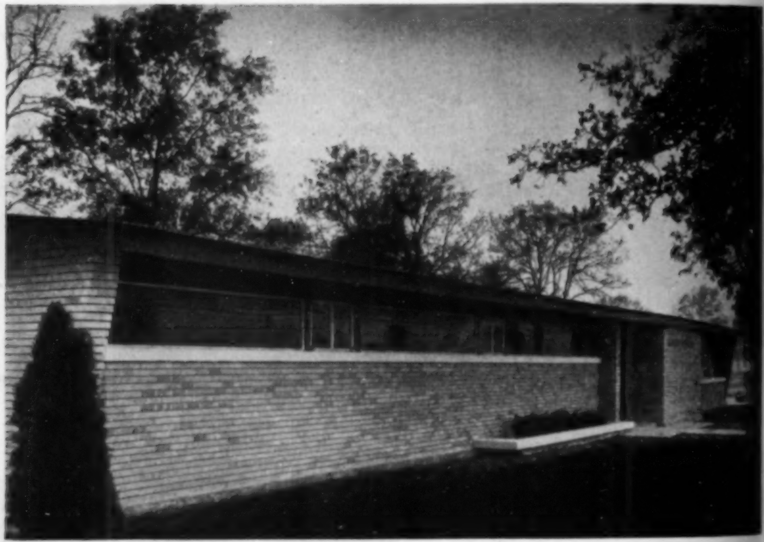
THORNHILL-CRAVER BUILDING

Houston, Texas

MacKie and Kamrath, Architects

THE simplest problem of the four is typified by this building: that of providing offices for a single company in a semi-residential neighborhood. It has been handled in an honest and straightforward manner. Plywood walled offices flank a corridor in a long, narrow plan. Each has ample daylight and sun protection with wide overhangs. The straight, wood frame and brick veneer facade is relieved by planting and a break emphasizing the entrance.


NORTH
MECH.
OFF.
OFF.
T.
DRAFT'G
OFF.
DIC-TAT'G
V.
OFF.
RECEPT'N
OFF.
CONF.
OFF.
OFF.
OFF.
OFF.
FILES
OFF.
0
10
20
30



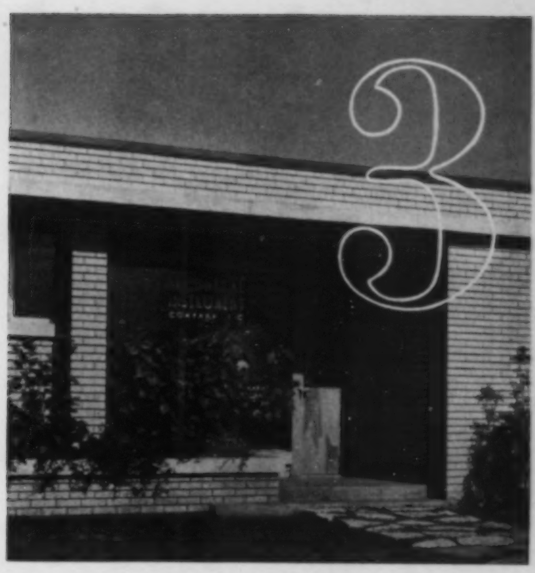
Domestic character has been imparted to the design by small scale and low, pitched roof. Projecting fins of the end walls give unity with roof, serve as decorative elements

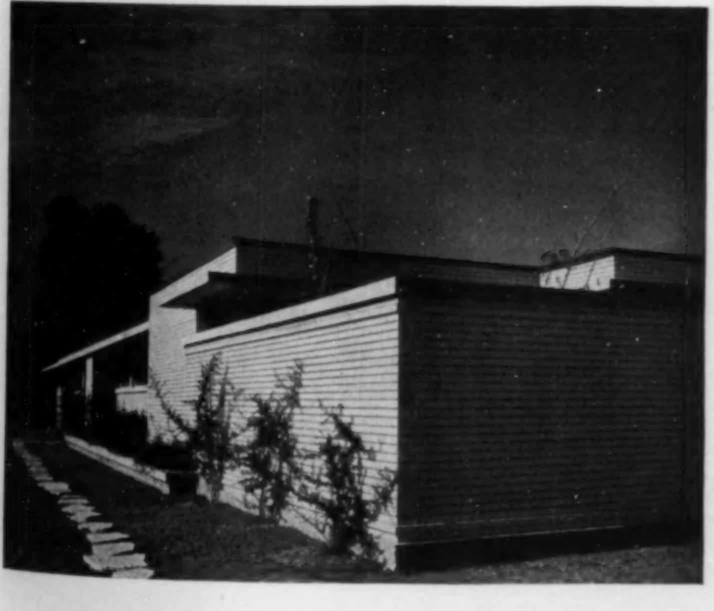
TECHNICAL INSTRUMENT COMPANY

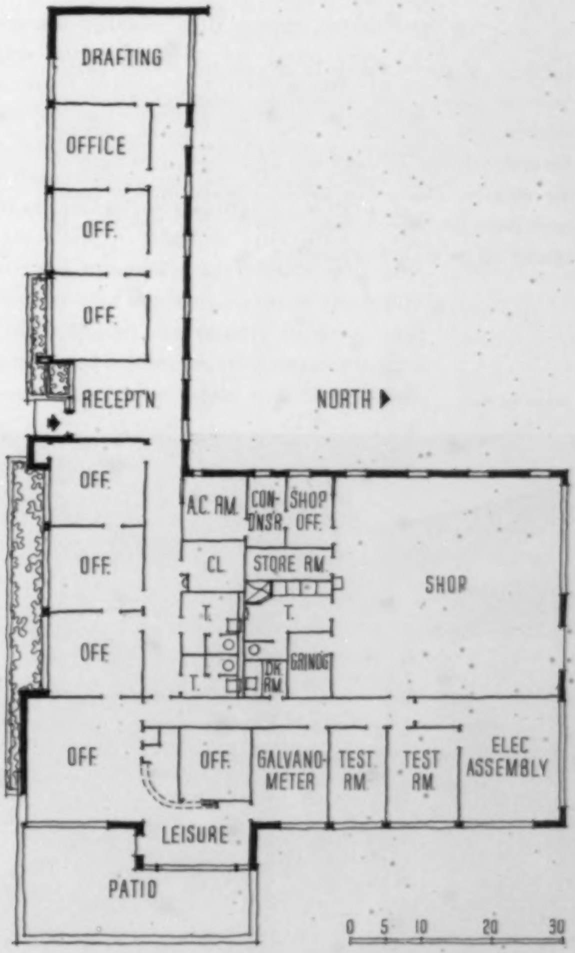
Houston, Texas

MacKie and Kamrath, Architects

Designed to house shop and testing rooms for light precision manufacturing, as well as company offices, this building employs an L-shaped plan with services grouped in the center. Offices are given choicer front areas, shops are relegated to the rear. The structure has concrete block and brick veneer bearing walls, interior pipe columns, bar joists and built-up tar and gravel roof. Interior walls are sand-finished plaster.



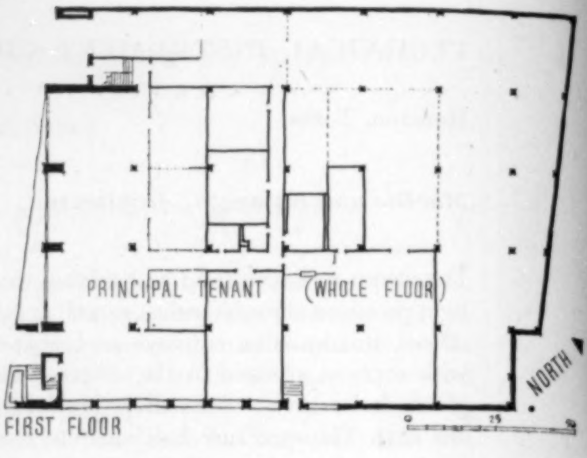


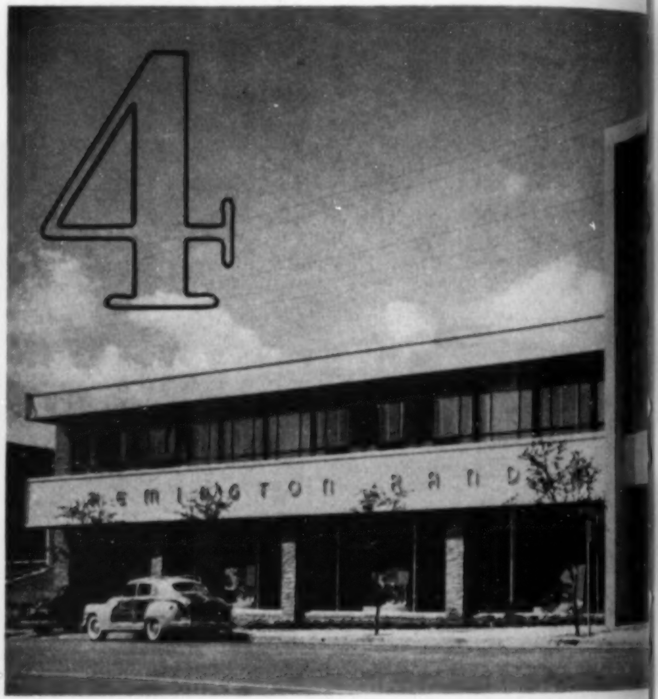

DRAFTING
OFFICE
OFF.
OFF.
RECEPT'N
NORTH ▶
OFF.
OFF.
OFF.
A.C. RM.
CON-DNS'R.
SHOP OFF.
CL.
STORE RM.
T.
T.
T.
DK. RM.
GRINDG
SHOP
OFF.
OFF.
GALVANO-METER
TEST RM.
TEST RM.
ELEC ASSEMBLY
LEISURE
PATIO
0
5
10
20
30

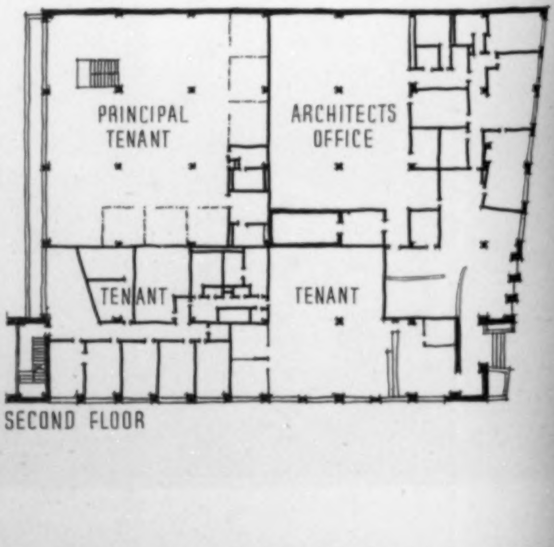
The exterior design utilizes play of intersecting overhangs, building projections, patio walls and unified planting

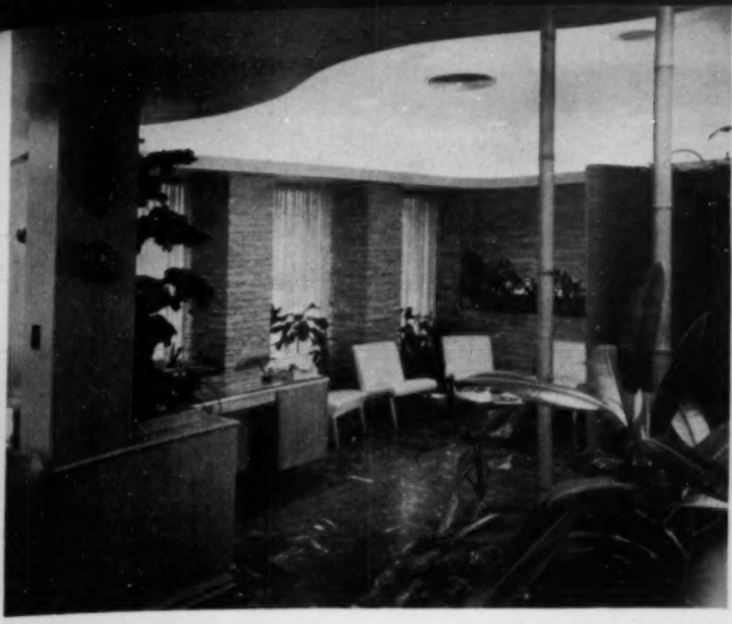
Location of the building in a semi-residential neighborhood permits use of planting and indoor-outdoor relationships suitable to the semi-tropical climate. Reception lobby (above) has plant box continuing on the interior. The office below adjoins lounge space and patio for entertaining clients. The bar can be closed off by a sliding partition

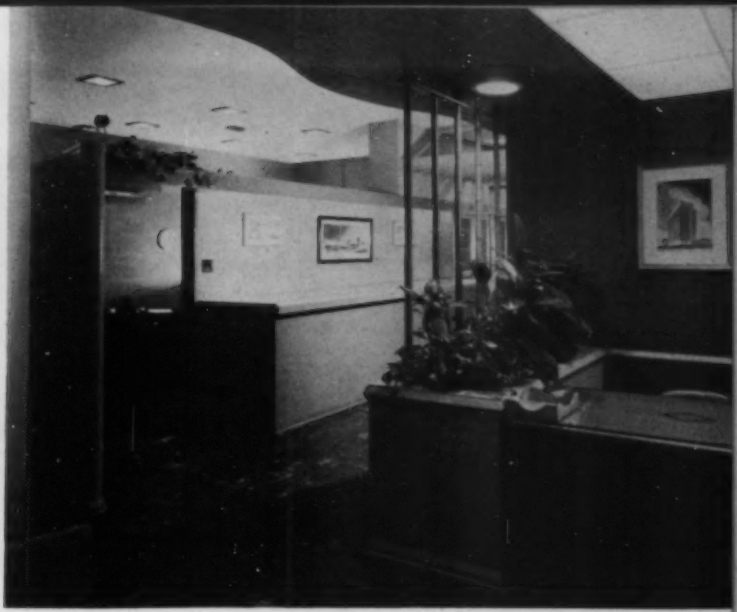
Lindenthal Photo

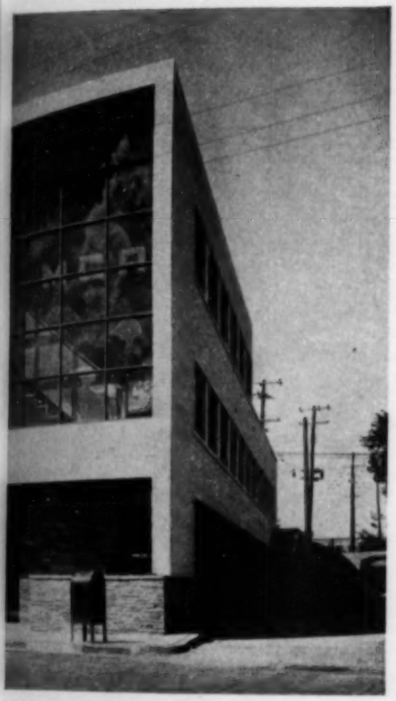

PRINCIPAL TENANT (WHOLE FLOOR)
NORTH
0
25
50
FIRST FLOOR


4
Remington Rand


PRINCIPAL TENANT
ARCHITECTS OFFICE
TENANT
TENANT
SECOND FLOOR





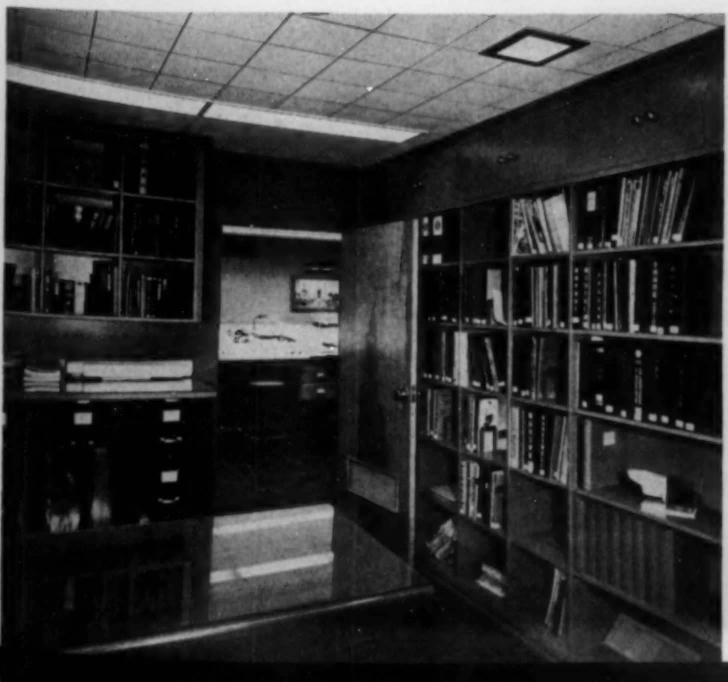


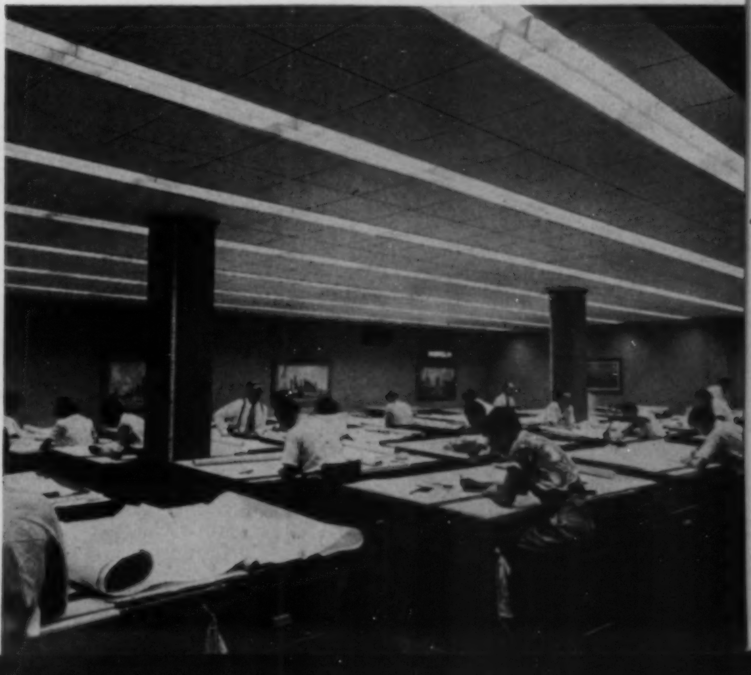
REMINGTON-RAND BUILDING

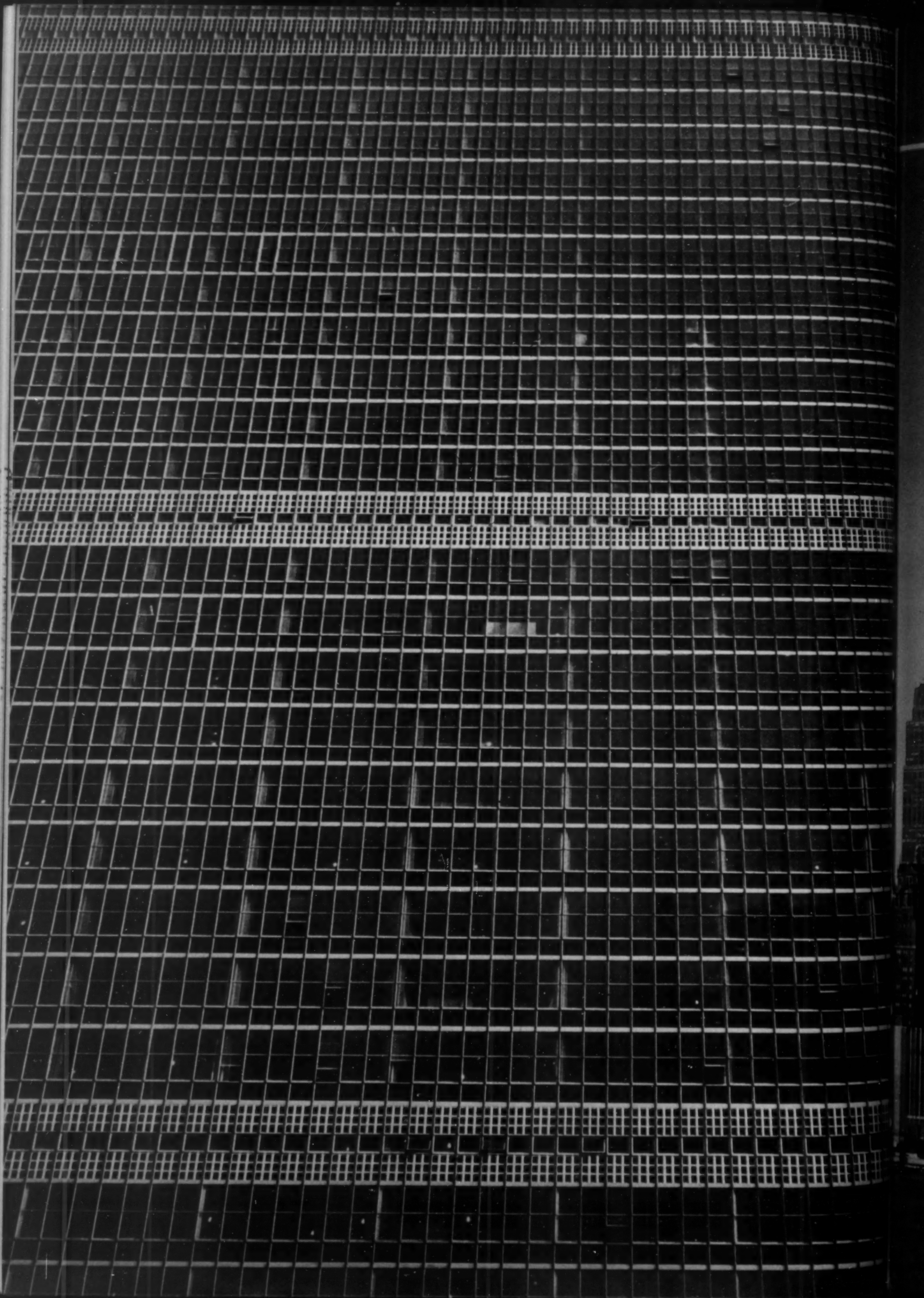
Dallas, Texas

George L. Dahl, Architects & Engineers

Ingenious use of a sloping site gives individuality, separation and private entrances to owner, architects and tenants of this building. The lot faces two important streets, permits entrances at two levels. Remington-Rand occupies the two-story portion of the facade shown. The large glazed block points up stairs leading to upper floor offices of the Music Corp. of America. On the next street (see photograph Architectural Record, Jan. 1950, p. 109) are entrances to the Associates Investment Co. and the architects' quarters. Reception room, library and drafting room of the latter are shown here. Office spaces are mostly interior, and make use of clear glass and folding partitions; controlled air, light and sound. Exterior walls contrast brick, cordova shell stone and ledgestone.

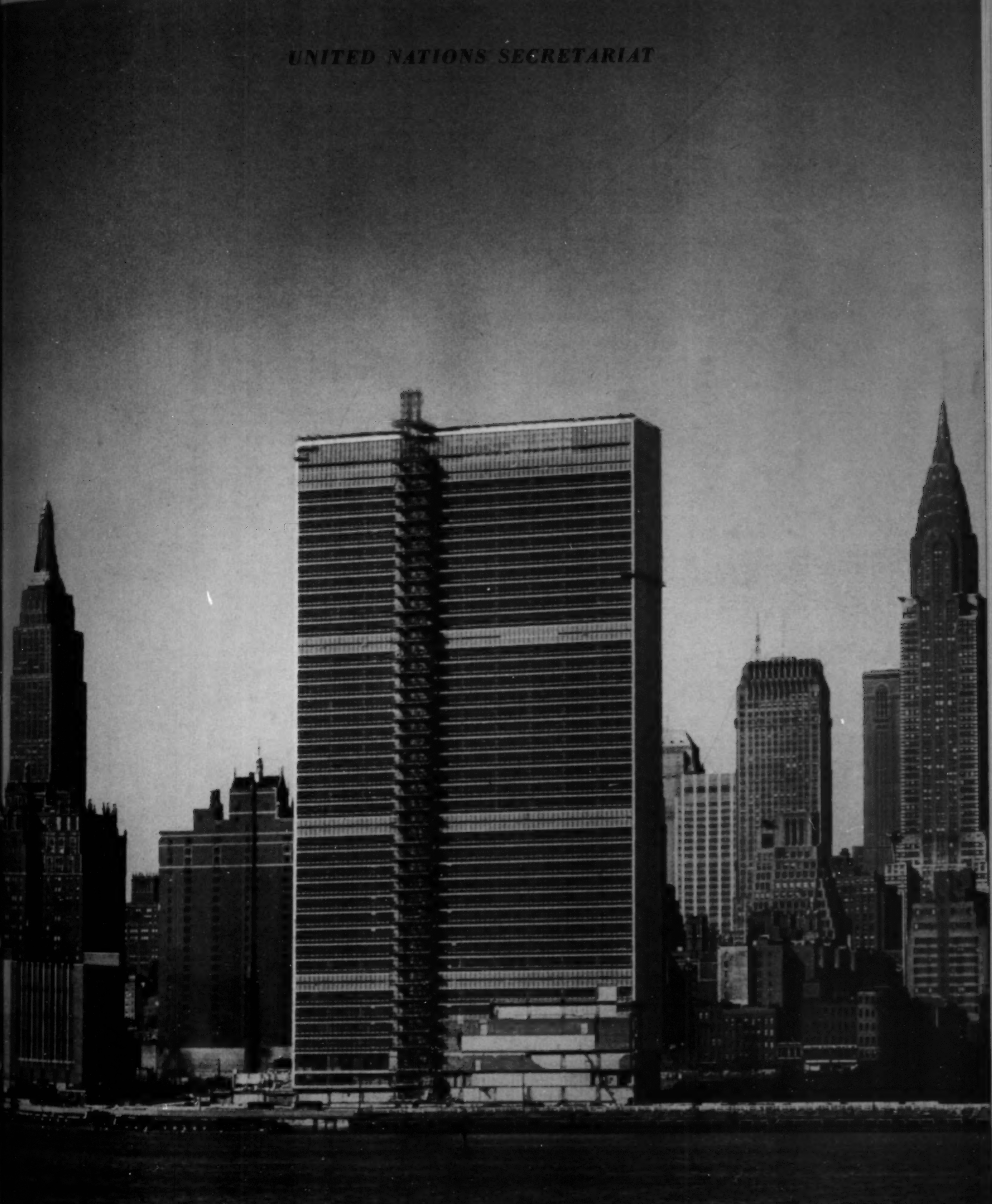




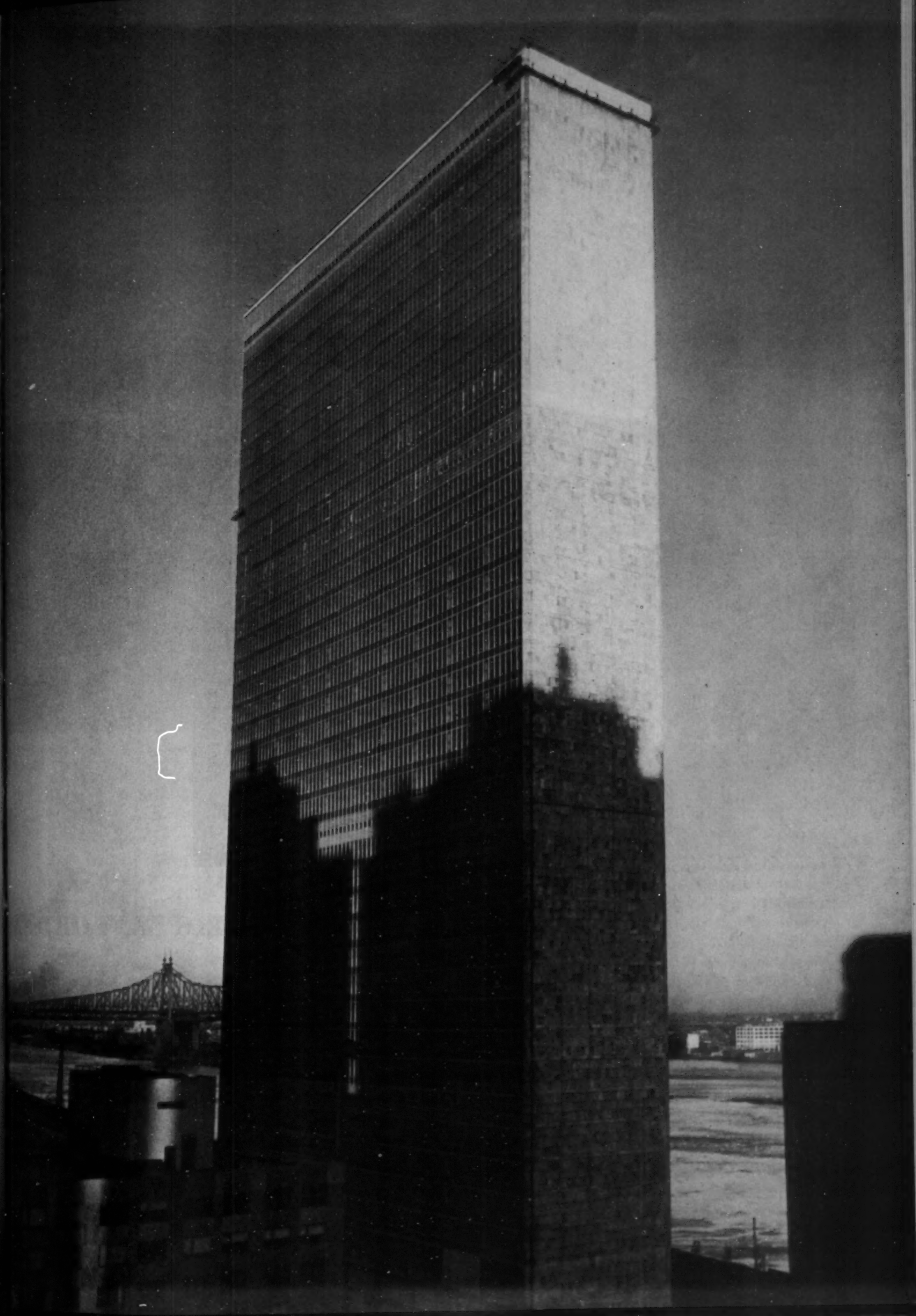


SUN, SHADOW AND SILHOUETTE

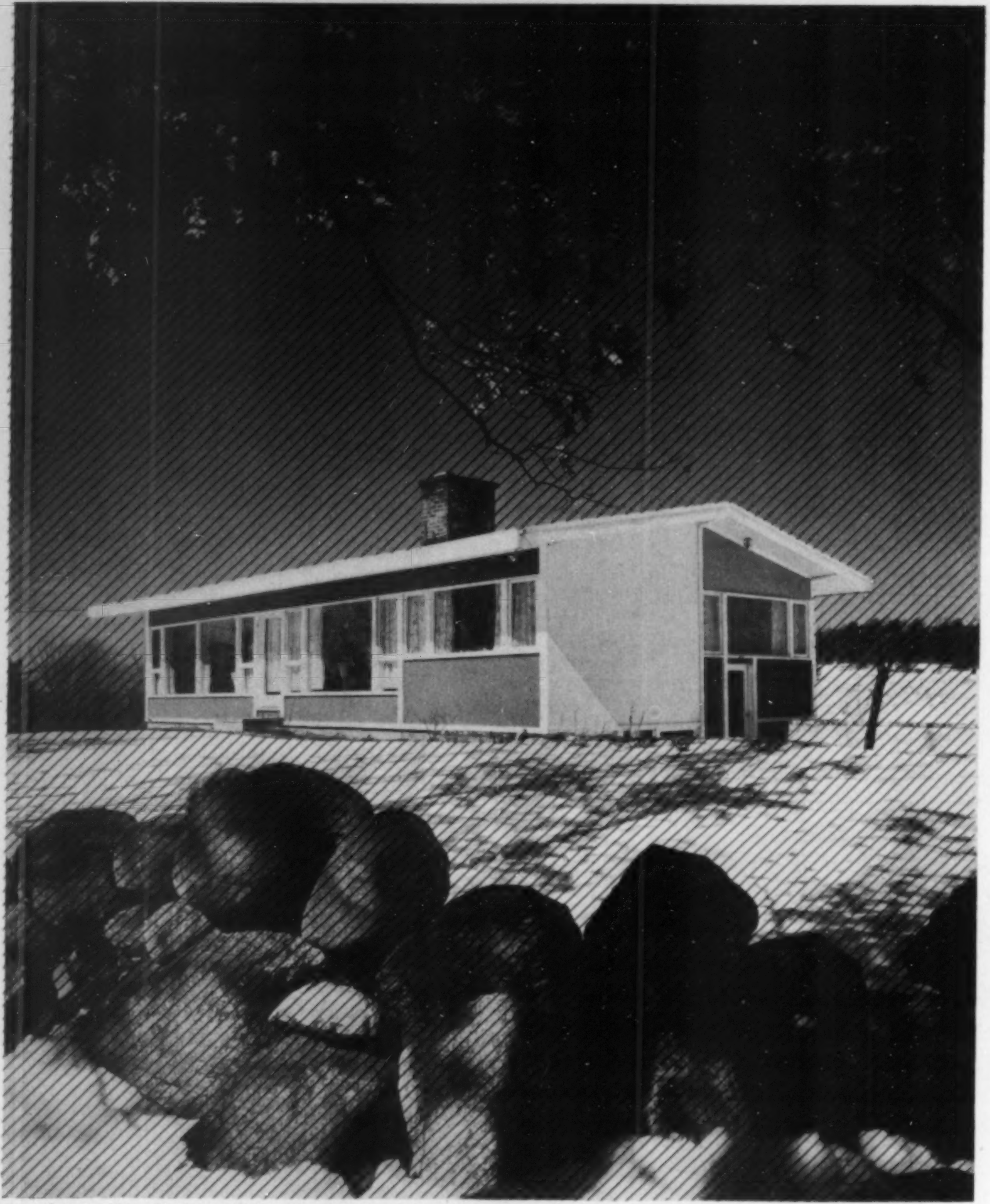
UNITED NATIONS SECRETARIAT



Louis B. Schlivek photos

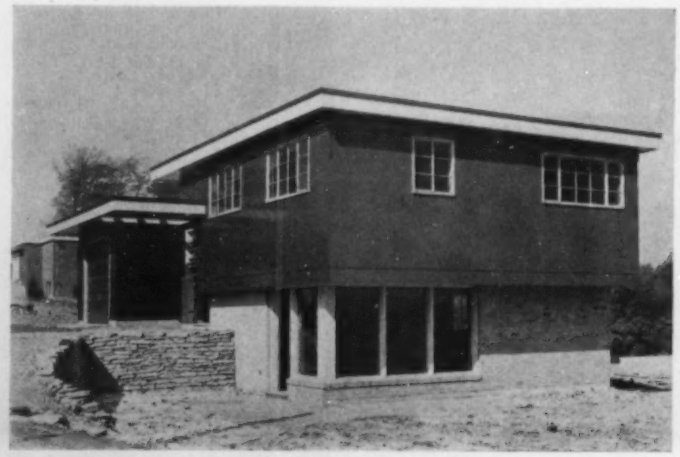


ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 161

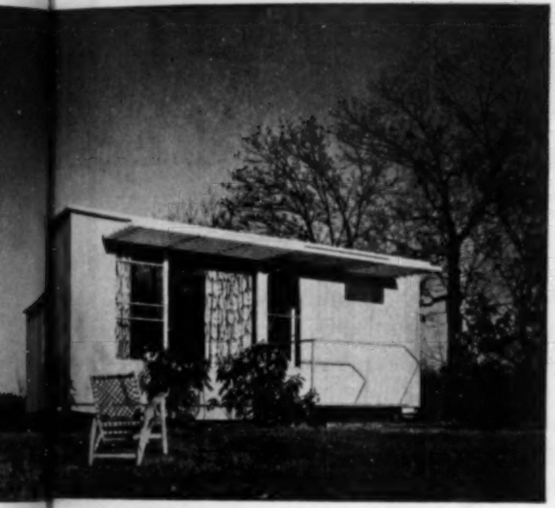


Lawrence House, by Architects Collaborative. Photo: Freedman Pictor

DO SMALL HOUSES AFFORD SA



Revere Quality (builder's) House, by J. A. Grove, Jr. Photo: A. Church



Prototype Prefab, by Acorn Houses. Photo: Stoller-Pictor

RD A SATISFACTORY PRACTICE?

THE ARCHITECT

and

Houses for individual clients

Houses for sale

Prefabricated houses

This Building Types Study has a somewhat broader objective than many of its predecessors. Here we are concerned not only with design, materials, equipment and construction; concurrently we are reporting on the small house as a field of architectural practice. The demand is tremendous; in 1948, 766,500 one-family houses, averaging $7,850 in cost, were started. Exact figures are not available for 1949, but it appears that over 840,000 were started last year. In January 1950, 60 per cent more dwelling units were started than in January 1949, and, according to Housing and Home Finance Agency estimates, we shall have to build at a much higher rate until 1960 to catch up. Yet the returns in this field are generally considered inadequate by architects. Builders and owners also have complaints.

This report is based on interviews with architects, builders and householders throughout the nation. Obviously we could not talk to every participant in an activity of such proportions; we have selected them representatively, with regard for geographical distribution and above all for integrity of performance. We wish to acknowledge with thanks the cooperation of The Revere Quality House Division of Southwest Research Institute, whose entire program is reviewed here, and of the individual architects, builders and owners whose patience as we pried into their intimate affairs has helped make this an honest evaluation.

WHEREVER you go among architects you find them talking shop. "Now when you've got a client like Smitty . . ." and ". . . that Johnny Bell, good builder if he gives you the right foreman . . ." and "Listen, we couldn't get finish carpenters on the job when . . ." Or else, "This mill construction, that's all it is, on the Verona house . . ." or ". . . way we did the Jones house, wrapped around this big oak, with the view . . ." And again, "We're working quickly, see, getting the board of education along with us, so the new school *and* the shopping center'll both be handy — why, there's twenty-five, maybe forty, houses to go right out there where the Planning Commission . . ."

Since last summer we've been talking shop with house architects all over the U. S., and with builders and owners. Much of this was done in person, a lot through our own representatives, a lot through The Revere Quality House program. The individual houses concerned range in cost from $9,500 to $20,000; all are small houses; and although only about twenty-five actual houses are shown here in part or in whole, they represent several thousand. We've found many praiseworthy things as well as a number of faults; some of the shortcomings are decidedly surprising — and this applies not only to architects, builders and owners, but also to our financing institutions. To obtain a realistic view of small house practice, we must consider, in addition to architects' beliefs, what the other participants in this field think and do.

The Architect-Builder Relationship

Exciting to architects is an increasingly apparent, and apparently sincere, understanding of the benefits obtainable through the application of architectural talent to "builders' houses." On the other hand, here and there one finds the attitude which architects have for years resented: that the architect is an interloper whose seal may be required but whose activity must be curbed. But in general, builders are groping to comprehend the architect for a very practical reason. In nearly every instance builders have told us that an architect-designed house stimulated interest in an entire subdivision, directly benefiting the builder even when the architected house itself did not sell quickly. Most architect-designed houses have sold exceedingly well. A few did not, because they were too extreme in handling, because the builder raised the selling price to get his money back — with, of course, a profit — or perhaps due to a particular set of circumstances.

This brings us squarely up against the builder's most severe, most cogent criticism of architects, one which applies with nearly equal force to architects of individual houses, of houses for sale, and of prefabricated houses. Too many builders are saying, "*The architect lacks the common touch.*" He does not talk a language instantly comprehensible to builder and owner or buyer. The architect requires a fee ranging from 6 to 15 per cent of construction cost. To the operative builder, who knows little of the cost of preparing plans and specifications (ignoring supervision for the moment), this looks like a sizable hunk of gravy. He considers what he hopes to make on one house and calls the architect a chiseler. If the architect would take the trouble to explain his costs for drafting, materials and overhead; to convince the operative builder that, once he has received enough fee to cover his architectural investment on a first house in a subdivision, subsequent variations in design might be obtained for a substantially smaller unit fee; and to demonstrate that the sum of architectural fees for an entire subdivision, when prorated among all the houses, amounts to something quite reasonable per house — then builder-architect relations would be substantially improved.

In dealing with both custom and operative builders, many house architects have been guilty of designing beyond the builders' capabilities. For example, consider the use of 4 by 4 posts and large expanses of fixed glass set between them, without casing or trim other than a glass mold — theoretically, a satisfying, direct, inexpensive detail. In practice, this requires perfect stock, well protected against marring in transit and storage (you realize how, and how many times, framing timbers are handled?); it means careful supervision by a superior foreman and painstaking work by framing carpenters (who after all aren't finish carpenters though they get nearly as much pay); after installation it means protection from the elements and against abuse during construction. Nine times out of ten such a detail is more costly than a conventional casing around the glass.

Comparing siting, living space, kitchens, in individual and builder houses. Top row, left to right,

Joseph Molitor Photo

The Builder, the Owner, the Financier

An architect who wishes to do good, sound, contemporary houses must be prepared to educate, even to wheedle, not only the builder and the owner or buyer, but also the finance institution involved, into proceeding with the job. Not so long ago fenestration and the cyma reversa constituted the architects' refuge from reality. How many times recently have you told a client about multi-purpose space instead of saying, "You can't afford both a guest room and a den," or spoken knowingly of insolation when you meant to warn him against the heat of a western sun? How often have such exotic words bred bewilderment, not the hoped-for understanding? And to project the idea beyond spoken words, how well, really, does the exotic, extreme house fit the average mundane owner? And if it doesn't fit its owner, is it truly good architecture?

On the other hand, the understanding of many developer-builders is far advanced beyond that of our cautious financial institutions, governmental and private. One builder, typical of several, told us that he could sell modern houses like hotcakes; people kept asking for them; he kept building Cape Cods because the local FHA office wouldn't insure anything else. Then there was the insurance company representative who went grudgingly, in line of duty, to inspect a modestly modern subdivision house; his company, he asserted, never lent on anything so wild; the home office must be crazy; he'd quit before he'd okay such a risk himself. (P.S. — after the inspection the representative reversed his stand completely. What he thought he had seen in blueprints and heard described was not at all what he found in the flesh.)

A recent survey confined to houses built for individual owners, conducted by Better Homes and Gardens *with the aid of F. W. Dodge Corp., turns up the following figures: of over 1400 houses all over the U. S., only 15 per cent were architect-designed and supervised; 7 out of 10 houses cost $10,000 or more (greatest percentage cost $10,000–$15,000); "ranch" and "contemporary" houses constituted 42 per cent of the sampling; median age of head of building family was 40.5 years.*

Valley, Providence and Neill houses, all by Architects Collaborative. Below, New Jersey subdivision

(see p. 148), Petroff & Clarkson; two views, Revere Quality House, San Francisco, by Joseph Esherick

Lionel Freedman Photos

Mercer Photos

It is very heartening to record wide public acceptance of contemporary design. Evidence to this effect comes from the Kansas City area, from conservative upstate New York, from a middleclass development near San Francisco. The Architects Collaborative, in Cambridge, Mass., was astonished by an elderly lady who demanded a radically modern house for her sole occupancy. A suburban housewife told our West Coast editor she'd never dreamed that a modern house meant a house so enjoyable. A purchaser paid a New Jersey developer a substantial premium to incorporate into a standard design a flat roof, sun-shades, banks of large windows, and numerous contemporary interior refinements.

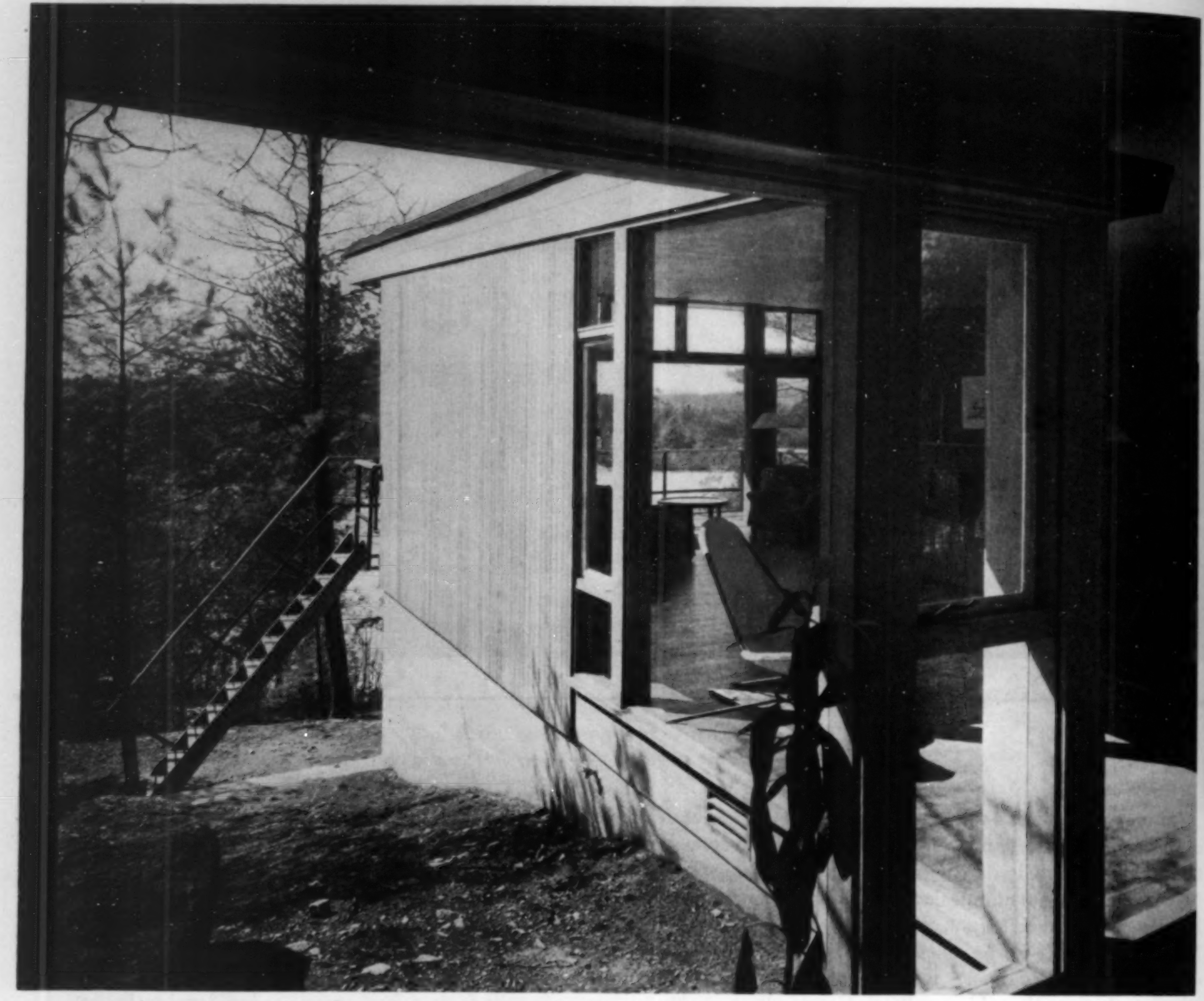
In the face of such interest, coupled with a more selective attitude on the part of purchasers now that the frantic buying of the early postwar years has begun to abate, operative builders are finding they have to turn to good architects. At the recent Chicago convention of the National Association of Home Builders appreciation of architectural talent was overwhelmingly evident, as we reported in our April, 1950 issue (p. 9). Nor do big-time operators alone appreciate it; a rural New England builder told us frankly that he needed no architect for a Colonial house but modern houses, which sold better to more desirable customers — well, he wanted to build a lot of custom modern jobs to get the hang of them so he could start a modern subdivision.

Almost any builder will tell you he's a business man. Truth is, he has to be a gambler and a craftsman above all. He gambles on weather, on materials deliveries, on labor productivity, and on the whim of the buyer. The craftsman tradition retains its strong hold despite prefabrication, site assembly of large repeated units, and other progressive techniques. So strong are these influences that, by and large, builders have almost no conception of modern cost accounting; it is reliably estimated that over 85 per cent of the country's house builders, custom and operative together, cannot tell until a house is finished what the job must bring to afford a reasonable profit. Ergo, in a bull market houses are over-priced; in a bear market, builders go broke. True, most builders keep records and many do know from day to day what their jobs cost; but when we dug into this question we found that roughly four out of every five builders who did know their costs had been painstakingly taught how by architects or financing institutions or both. And the number of cases in which the architect functions as job expediter, placing materials orders, telephoning suppliers, standing at the elbow of the mediocre foreman — particularly in dealings with smaller builders, this headache drives the architect to the nearest bar.

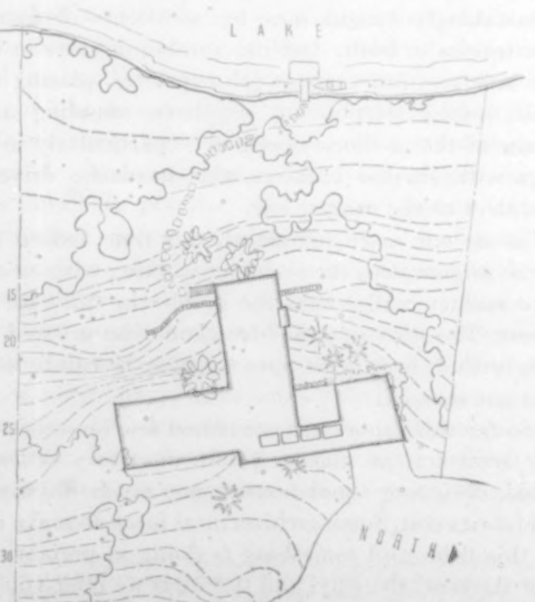
To air one more complaint, this time against architects: seldom does the architect working with an operative builder realize that the builder in this case is his client. The developer-builder cannot be ordered to do this or that; he himself pays the bills; he can be advised but not coerced.

So far this report has contained few hints as to how the architect can make a profit, monetary or less tangible, designing small houses, not much discussion of prefabrication. Some architectural firms *do* make money in this field, and something *is* doing in prefabrication. For the how, the why, and the what we refer you to the following pages.

— *Frank G. Lopez*



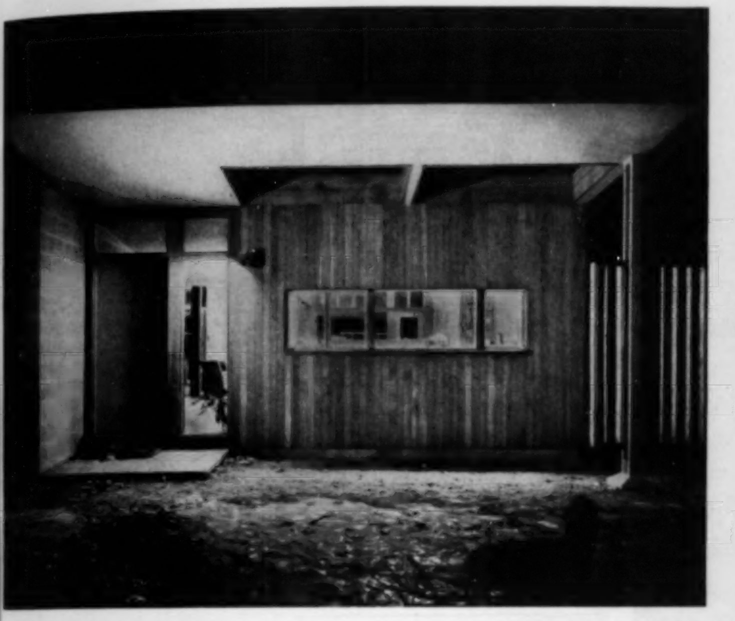
I—THE INDIVIDUAL HOUSE: PRACTICE OF TH



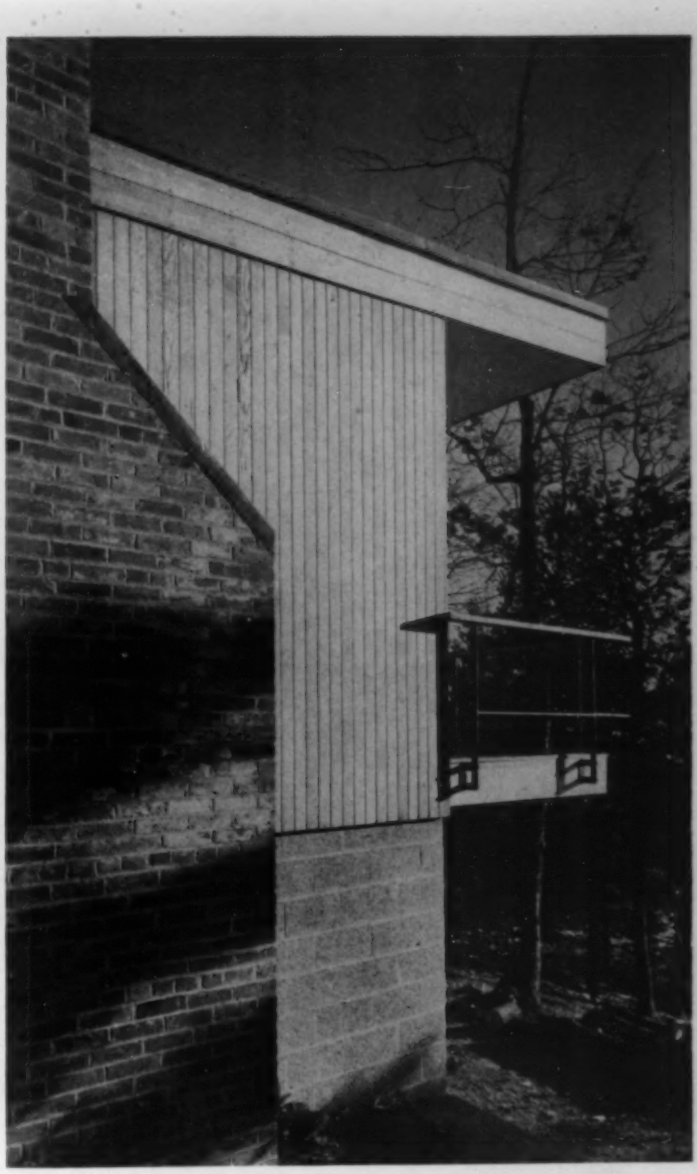
The Architects Collaborative is more than an ordinary partnership or association. In it, Jean and Norman Fletcher, Walter Gropius, John and Sarah Harkness, Robert McMillan, Louis McMillen, and Benjamin Thompson share responsibilities, authority, and profits. In addition, TAC, as it is becoming known, employs a number of people, all young. The office has yet to refuse a job, residential or not, however small; and it has consistently furnished its co-equal members a fair living. None expect to get riches out of TAC, but most of them have built, or are now building, houses of their own. So natural does it seem to them to make money on houses even smaller than the Catheron job (see photos) that they are somewhat puzzled to realize that many architects cannot afford to take such work.

TAC's success in this chancy field is due principally, we believe, to their method of handling their relatively large staff like a group of one-man offices, and yet of

The house shown in detail here, for Mr. and Mrs. Alan Catheron, in Foxboro, Mass., was selected as a good, representative job of reasonable cost, produced by this comparatively new yet flourishing Massachusetts office



Photos: Lionel Freedman — Pictor

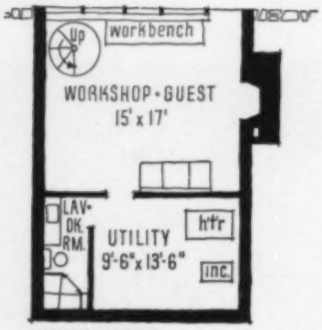


ARCHITECTS COLLABORATIVE

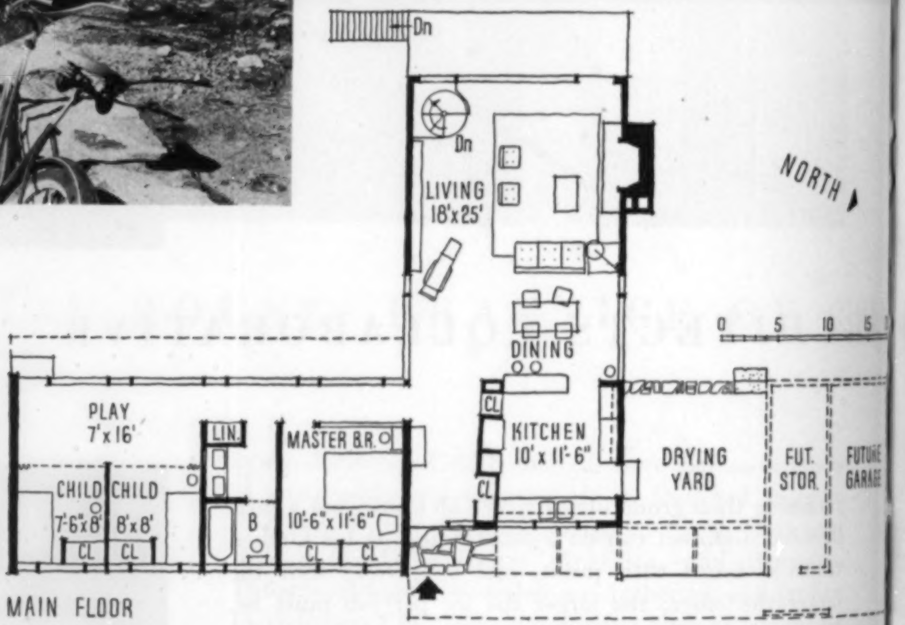
The Catheron house, so situated among evergreens that a comprehensive exterior photo could not be taken, is oriented to take full advantage of the view over a small lake. It displays many standard details and materials used by these architects on inexpensive houses

retaining their group identity. We all know that a just-licensed architect can do a small house on his kitchen table at home with profit, and conversely that the larger the office, the larger the fee per job must be. When a job comes in to TAC it is assigned to a design team which is made up of roughly three members of the office. These people work on the design and are responsible for working drawings, specifications, supervision, and all client or builder contacts. When preliminaries are completed the entire office sits in general criticism. The team's work to date is criticized openly; but any suggestions made are not mandatory — they may be adopted or not. For control, every job has a sheet on which its time schedule is set, hours being allotted, on the bases of experience and expected fee, for each stage of the work. Against this time goal are entered daily the actual hours spent, so that at a glance one knows accurately the state of a job's health.

Drawing at right, of window wall in Catheron house (shown from within and without in large photographs), illustrates simplicity of TAC detailing and concessions to usual building practices

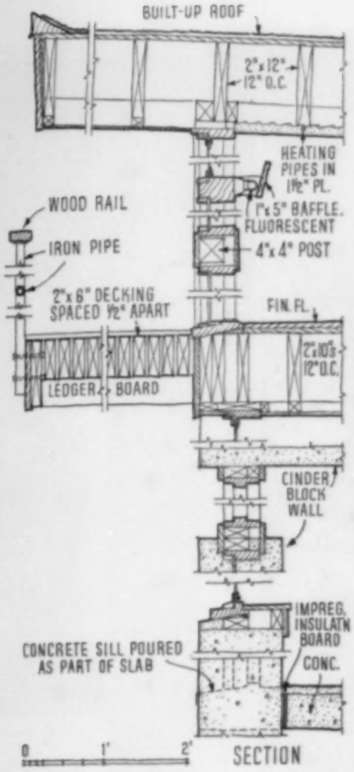

Up
workbench
WORKSHOP-GUEST
15' x 17'
LAV-DK. RM.
UTILITY
9'-6" x 13'-6"
h'tr
inc.

LOWER FLOOR


Dn
Dn
LIVING
18'x25'
NORTH
0 5 10 15
DINING
PLAY
7'x16'
LIN.
MASTER B.R.
CHILD
7'-6"x8'
CHILD
8'x8'
B
10'-6"x11'-6"
CL
CL
CL
CL
CL
CL
KITCHEN
10' x 11'-6"
DRYING YARD
FUT. STOR.
FUTURE GARAGE

MAIN FLOOR

Below, circular stair to lower floor multi-use room; right below, north exterior

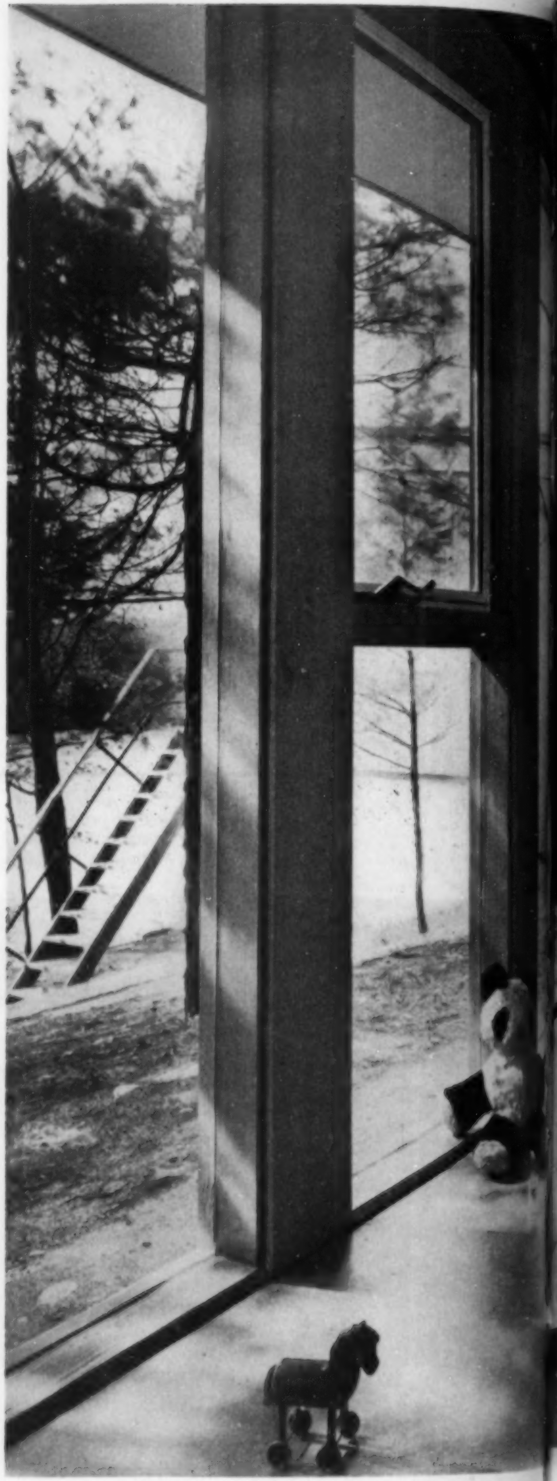

BUILT-UP ROOF
2"x12" 12" O.C.
HEATING PIPES IN 1½" PL.
1"x5" BAFFLE, FLUORESCENT
4"x4" POST
WOOD RAIL
IRON PIPE
2"x6" DECKING SPACED ½" APART
FIN. FL.
2"x10's 12" O.C.
LEDGER BOARD
CINDER BLOCK WALL
IMPREG. INSULATN BOARD
CONCRETE SILL POURED AS PART OF SLAB
CONC.
0
1'
2'
SECTION

House clients of The Architects Collaborative, above the average in architectural awareness, come to the firm with contemporary design in mind, often from college circles. Occasionally a client is put out by TAC's system of allotting available firm members to a job. Frequently the client's desires increase during design and construction, but this seldom becomes unreasonable; TAC does not delude its clients, and when more building money is really needed it has usually appeared. Many clients need guidance in selecting furnishings; TAC is beginning to wonder if it should not set up a decorating service on a commercial basis. TAC's friendliness with most of its clients speaks worlds for the firm's sincerity, understanding and tact.

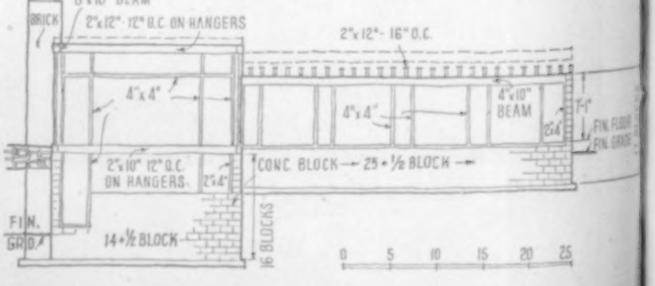
This is more impressive when you consider that TAC is one of our most advanced architectural offices, producing houses far out of the ordinary in design and soundness of construction. It is important, too, that in such offices much experimentation — with design, materials, methods, equipment — takes place initially, later to win acceptance by speculative builders. At most, only in 15 per cent of the nation's houses can ideas be thus tested; there are no accurate figures on number of custom houses vs. builder houses, but the influence of custom house design is admittedly great.

Lionel Freedman—Pictor Photos

There is very little of the bizarre in the materials, structure, details, or equipment which TAC habitually employ. They do insist upon high quality of materials and workmanship, and to get good workmanship without undue expense they stick pretty closely to conventional procedures. For instance they early found that they could not use bare framing members, without trim, inexpensively. Yet each of their houses has an individual character although all are unmistakably TAC products — a double paradox since each TAC job is the result of one design team's effort within the group framework. Perhaps this TAC character grows partly from their use of standard details — of eaves, windows, vertical boarding, etc. — which were adopted both as time savers and to insure good craftsmanship, and which are constantly being refined. Certainly the glazed wall shown above is typically TAC, with its wide expanses of fixed glass separated by paired posts which embrace operable sash. This simple device affords a satisfying sense of structural security and any reasonably competent builder can build it. Similar reasoning underlies



Lionel Freedman—Pictor: Photos


BRICK
8"x10" BEAM
2"x12" · 12" O.C. ON HANGERS
2"x12" - 16" O.C.
4"x4"
4"x4"
4"x10" BEAM
2"x4"
7'-1"
FIN. FLOOR
FIN. GRADE
2"x10" 12" O.C. ON HANGERS
2"x4"
CONC. BLOCK — 25 + ½ BLOCK —
16 BLOCKS
FIN. GRD.
14+½ BLOCK
0
5
10
15
20
25

Every room in the Catheron house has its view. From the kitchen one can look past the serving counter through the living room's glazed end (far left); from bedrooms (above), through windows and folding walls across the glassed-in corridor (center left) which is also the children's playroom. Bath (left) has twin lavatories, other fixtures in separate compartment

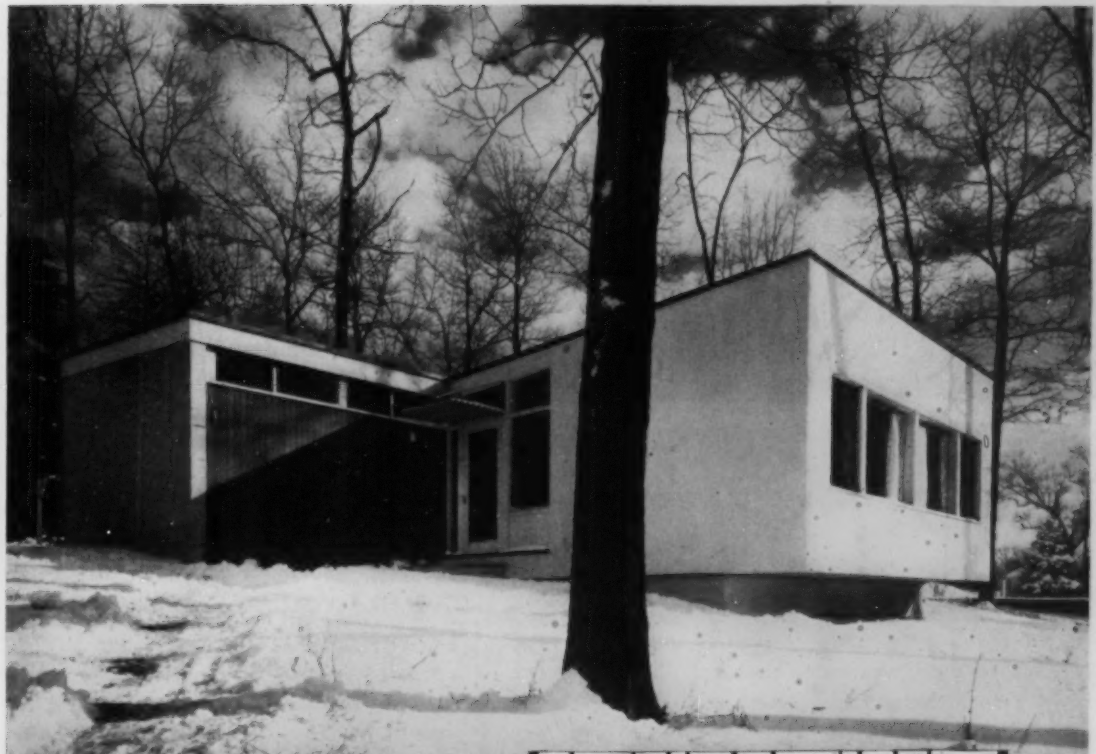
their detailing of gravel stops and drip molds, their selection of equipment such as radiant floor heating. However, much of this character also derives from careful planning and siting to fit each family and each piece of property.

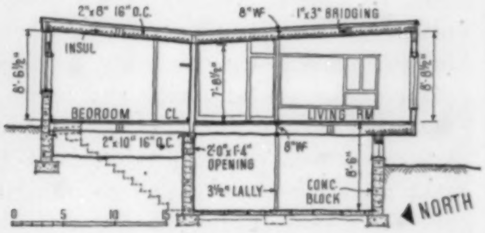
TAC's relations with builders are in general excellent. They work with several, not favoring one in particular. All their builders, now experienced in contemporary work, seem not to fear it — though there is suspicion that some builders exact more profit than the market will continue to bear. (One TAC member is currently acting as his own general contractor, on his own house, to determine what the profit margin is.) Each builder, they find, has his good and bad points: one does a fair job quickly; another, slower, is better on details; and so on.

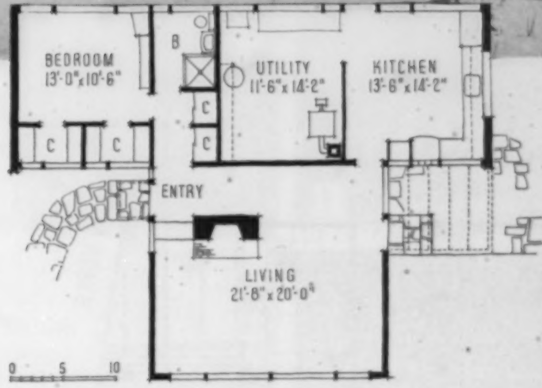
All this adds up to a fairly successful though young practice. The members of TAC are friends with most of their clients and builders; they live well if modestly; they enjoy their small houses; and they are currently moving their office to better quarters.

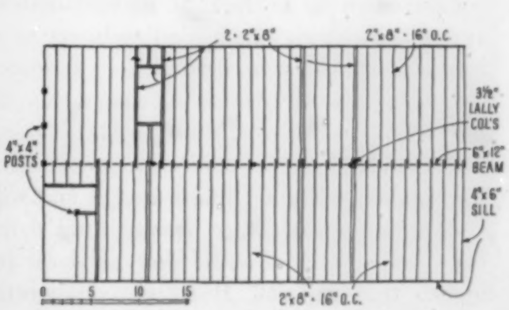
One type of drawing furnished the builder by TAC is the quarter-inch-scale structural elevation like that on the facing page. Simple yet complete, its accurate block coursing, framing sizes and positioning help the foreman visualize his work. Unusual conditions are detailed at larger scale

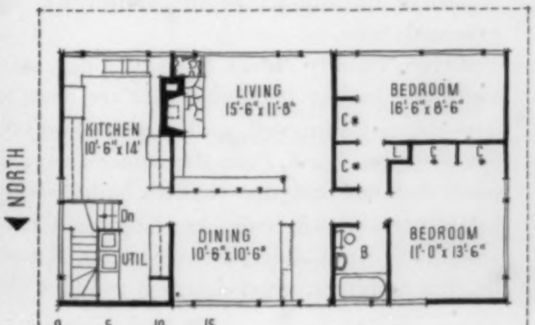
Photos: Lionel Freedman—Pictor

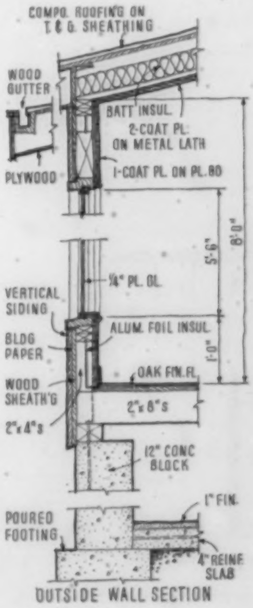



2"x8" 16" O.C.
8" WF
1"x3" BRIDGING
INSUL
8'-6½"
7'-8½"
8'-8½"
BEDROOM
CL
LIVING RM
2"x10" 16" O.C.
2'-0"x 1'-4" OPENING
8" WF
8'-6"
3½" LALLY
CONC. BLOCK
NORTH
0
5
10
15


BEDROOM
13'-0"x 10'-6"
B
UTILITY
11'-6"x 14'-2"
KITCHEN
13'-6"x 14'-2"
C
C
C
C
ENTRY
LIVING
21'-8"x 20'-0"
0
5
10


2 - 2"x8"
2"x8" - 16" O.C.
3½" LALLY COL'S
4"x4" POSTS
6"x12" BEAM
4"x6" SILL
2"x8" - 16" O.C.
0
5
10
15


LIVING
15'-6"x 11'-8"
BEDROOM
16'-6"x 8'-6"
KITCHEN
10'-6"x 14'
C
C
C
C
C
Dn
UTIL
DINING
10'-6"x 10'-6"
B
BEDROOM
11'-0"x 13'-6"
NORTH
0
5
10
15


COMPO. ROOFING ON T. & G. SHEATHING
WOOD GUTTER
BATT INSUL.
2-COAT PL. ON METAL LATH
PLYWOOD
1-COAT PL. ON PL. BD
8'-0"
5'-6"
¼" PL. GL.
VERTICAL SIDING
BLDG PAPER
ALUM. FOIL INSUL.
1'-0"
WOOD SHEATH'G
OAK FIN. FL.
2"x8"s
2"x4"s
12" CONC BLOCK
1" FIN.
POURED FOOTING
4" REINF. SLAB

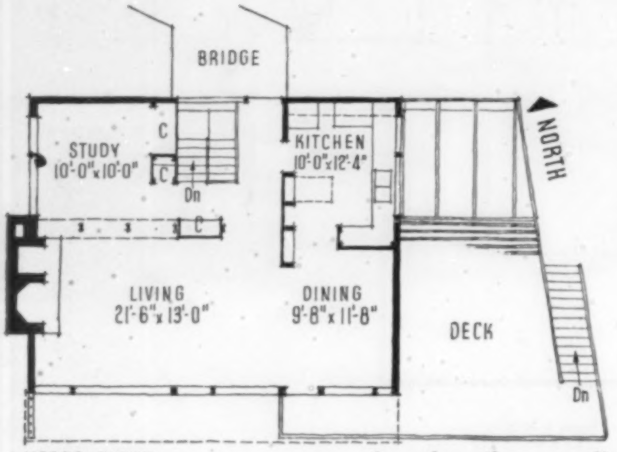
OUTSIDE WALL SECTION

Consistency of design in two houses by The Architects Collaborative: photo and drawings above, Neill House, Andover, Mass.; left and opposite page, Lawrence House, Lexington, Mass. Another is shown on the next page. Character is achieved by adroit handling of familiar things, not by straining for something different

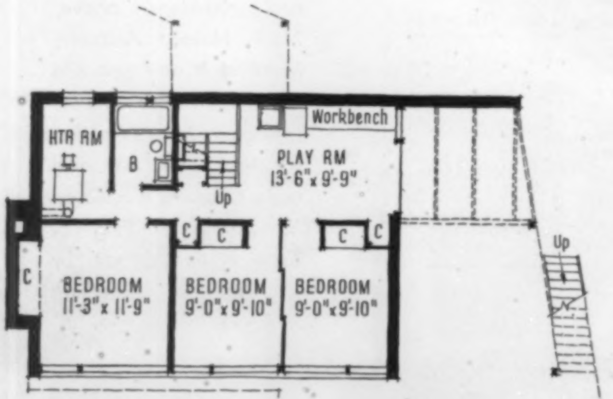
Freedman Pictor

THE ARCHITECTS COLLABORATIVE

In the Providence House TAC design talent is also unmistakably present even though its similarity to many West Coast houses is evident. The sloping site demanded such a treatment, made the broad planked deck a "natural".



UPPER FLOOR



LOWER FLOOR

II—ARCHITECTS AN

Revere Quality House Division of Southwest Research Institute — now in its third year, with about 20 widely scattered exhibition houses (representing several thousand) built or building — is engaged in proving that quality design, materials, workmanship and equipment pay off in speculative houses. To earn the Quality House seal of approval, a house must be part of a multi-house subdivision, architect-designed, built by a reputable builder to certain minimum design and materials standards; the builder must guarantee construction for a year; the house must cost less than $20,000, preferably less than $15,000. The builder gets publicity and prestige from participation in the program which should add up to more and quicker sales.

Southwest Research Institute is an endowed, nonprofit research organization. Its Revere Quality House Division, the principal members of whose staff are listed above, has a large board of advisory counselors who represent architects' and builders' organizations, researchers, publications, financing agencies and educators. As criteria for awarding approval, emphasis is placed on site planning; use of space; planning for health, convenience, livability, privacy; orientation; planning for outdoor living and future needs; quality materials, construction methods, equipment. It is everlastingly to the credit of the Quality House program that ways have been found to translate these rather ephemeral criteria into practical, everyday terms.

Builders have traditionally relied on gadgets to sell houses; architects have pushed, when they could, the less tangible virtues. The Revere Quality House Division has found the greatest obstacle to architect-builder collaboration to be lack of mutual understanding. A typical builder may regard an architect as an expensive esthete, an exterior decorator — a source of plans (when laws require) more expensive than the free ones he could get elsewhere. He regards this cost as unnecessary overhead. Some builders, more knowing, recognize the salability of good house design and will pay for it — but not much. More architectural firms now than ever before and several plan services are designing houses that will sell. But true collaboration, genuine regard of the builder as the architect's client, is still extremely rare.

Revere Quality House Division's first step is to convince the builder he should hire the best architect he can get, pay him well, and expect close collaboration. On the other hand, even the sincere, capable architect often does not recognize that his builder-client may well know more about house building than he; that close work with the builder, at every step, is essential; that he, the architect, must design a product that will sell.

OPERATIVE BUILDERS: REVERE QUALITY HOUSES

In the next pages we review the experience of Revere Quality House Division in promoting good speculative house design. In addition to members of ARCHITECTURAL RECORD'S *staff, the following have rendered unusually valuable assistance: John E. Mitchell of Dallas; Alfred Moore of Syracuse, N. Y. and John W. Ragsdale of Denver, Col. — all members of F. W. Dodge Corp. We particularly wish to thank C. W. Smith, Director; John Hancock Callender, Architectural Consultant; and Virginia Caldwell, Manager, Building Relations Program (all of Revere Quality House Division of Southwest Research Institute) for facilitating our efforts to obtain a true picture of builder-architect cooperation*

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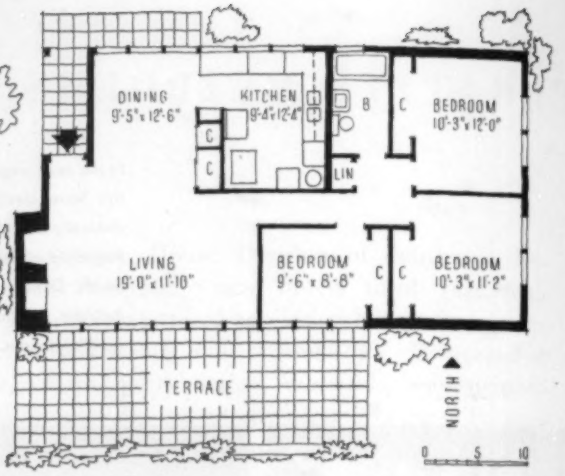
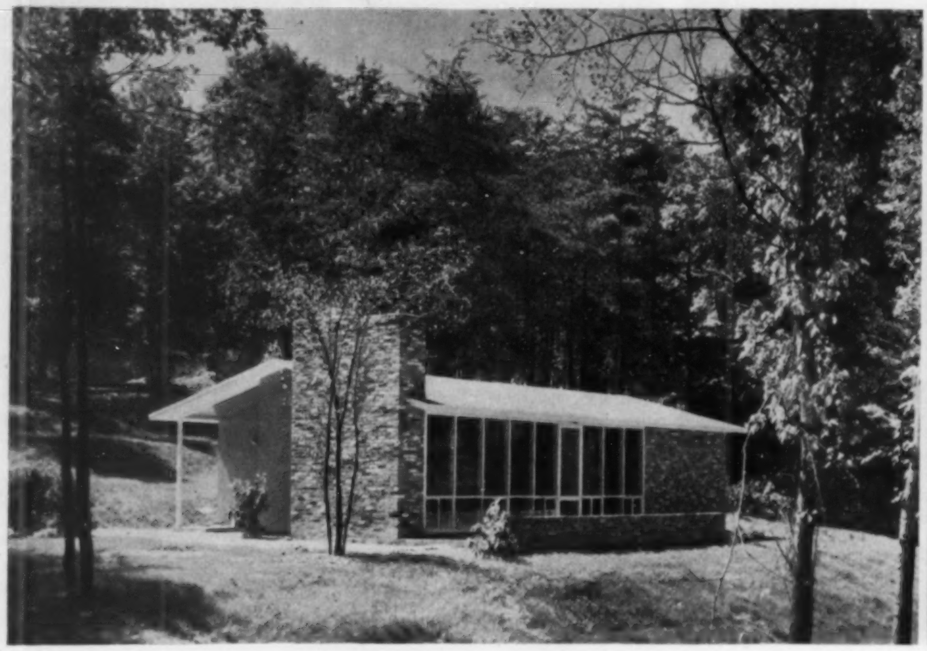
Above are 16 of the Revere exhibition houses; most of these and some others appear in greater detail on subsequent pages. Locations, completion dates, architects and builders are: 1, Alexandria, Va.; 1949; Charles M. Goodman Assoc.; Hollin Hills, Inc. 2, South Bend, Ind.; 1948; L. Morgan Yost; Place & Co., Inc. 3, Houston, Tex.; 1948; MacKie & Kamrath; Frank W. Sharp. 4, Denver, Colo.; 1950; Eugene Sternberg; Edw. B. Hawkins. 5, Phoenix, Ariz.; 1950; Roy Flesh; Clarence A. Suggs. 6, Pittsburgh, Penn.; 1949; John A. Grove, Jr.; Noble S. Clay Co. 7, Kansas City, Mo.; 1949; David B. Runnells; D. H. Drummond. 8, Cleveland, Ohio; 1948; W. D. Riddle; M. J. Fishman. 9, Boston, Mass.; 1948; Samuel Glaser; Arnold Hartmann. 10, Sarasota, Fla.; 1948; Twitchell & Rudolph; Lamolithic Industries. 11, Springfield, N. J.; 1948; Kenneth Kassler Assoc.; Suburban Properties, Inc. 12, Dallas, Tex.; 1949; De Witt & Swank; American Home Realty Co. 13, San Bruno, Calif.; 1948; Joseph Esherick, Jr.; Williams & Burrows, Inc. 14, Seattle, Wash.; 1948; Chiarelli & Kirk; Albert Balch. 15, Salt Lake City, Utah; 1949; W. Rowe Smith, of the office of Fred Markham; Federal Homes, Inc. 16, Syracuse, N. Y.; 1949; Gordon Schopfer; Mayer & Rebhahn.

Other exhibition houses, not shown above, have been built in Detroit, Mich.; 1949; James B. Hughes; Ranch Homes, Inc.; Bethesda, Md.; 1949; Sweeley, Heap & Gauger; Carl M. Freeman, Inc.; and Cincinnati, Ohio; 1950; John R. Schott; Joseph Dillon

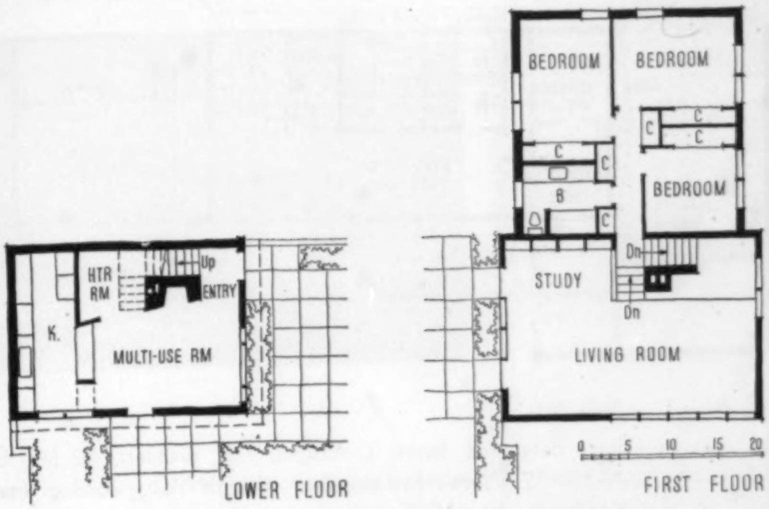
In Hollin Hills, Alexandria, Va., every effort has been made to preserve the virtues of a wooded, rolling site. Plots are fairly large. When conditions demand, architect Charles M. Goodman (top right) and Robert C. Davenport, president of Hollin Hills, Inc., builders (below) have not hesitated to use unconventional floor layouts. Photo below, plan right, show a one-floor house; other photos, plan on facing page, for sloping site. Davenport has worked with several architects; is building 50 houses a year; uses site fabrication of some woodwork, shop fabrication of structural elements; believes money is well invested in architectural services because resulting houses sell from blueprints

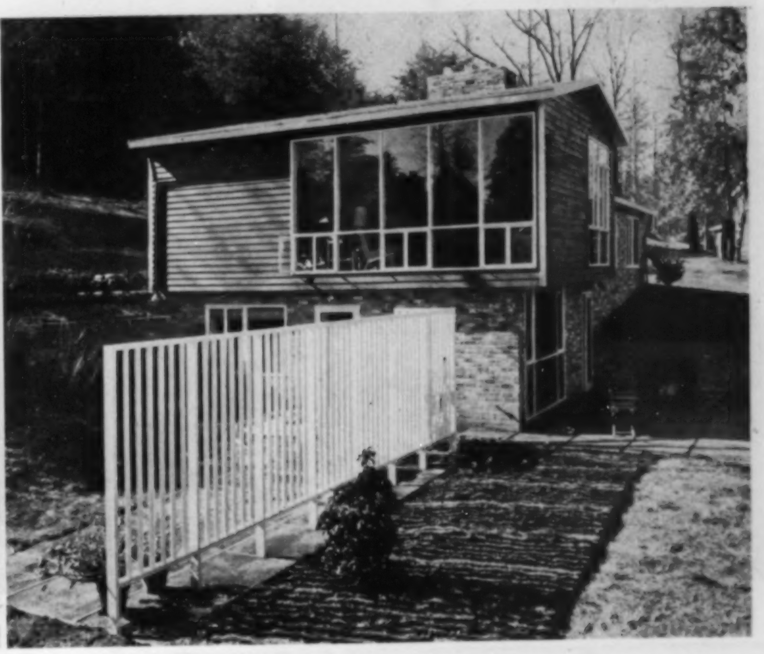


Bob Lautman Photos

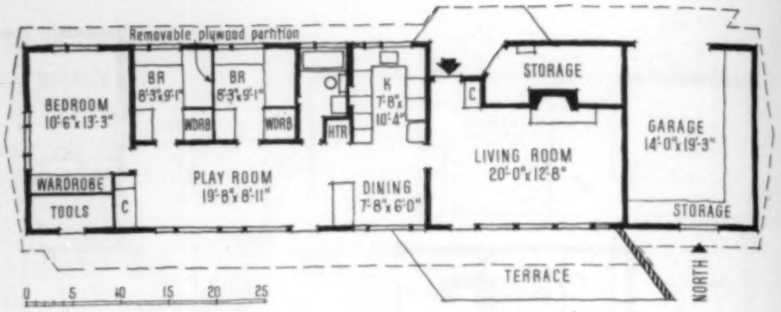


One of the best examples of builder-architect teamwork is in Hollin Hills — teamwork which, Revere Quality House Division points out, was thoroughly established well before they certified the house. Architect Goodman has done over 330 houses for several builders, starting with analyses of land, neighborhood, probable satisfactory sales price, space needs. His fee depends upon what of the following he performs: subdivision layout, house design, house siting, cost budgets (quantity take-offs and cost estimates, a valuable service to builders), revisions for buyers, interior and outside decoration — all of which approximate custom design. He goes into construction methods, lays out sub-assemblies for mass fabrication and offers consultation on bids. For thus nursing a project Goodman gets a percentage of the cost of each original house, an increment on every identical house, cost plus for revisions and additions, and a bonus for construction cost savings. Goodman works only with one builder in a given area. Davenport, who has worked with several architects, is well pleased. His houses sell before construction starts; since they are all "costed" before building he reduces the speculative gamble. (A common indictment of builders is under-financing and over-extension, always making tomorrow's job pay for yesterday's; Davenport sells lots and arranges payments so each job pays its own way.) For 2½ years FHA would not give an adequate valuation on Hollin Hills houses; they were too modern. The VA would, however; and all but one of the large insurance companies offered loans when local banks would not. Buyers can obtain changes in design with ease; perhaps the only serious criticism is lack of storage. However, it was a deliberate decision to put everything possible into living space, and to offer unheated outdoor storage sheds at extra cost.


BEDROOM
BEDROOM
C
C
C
C
B
C
C
BEDROOM
HTR RM
Up
ENTRY
K.
MULTI-USE RM
LOWER FLOOR
STUDY
Dn
Dn
LIVING ROOM
0 5 10 15 20
FIRST FLOOR



The office of Charles M. Goodman Associates helps the builder develop raw land from time it is acquired, even advises on worth of land

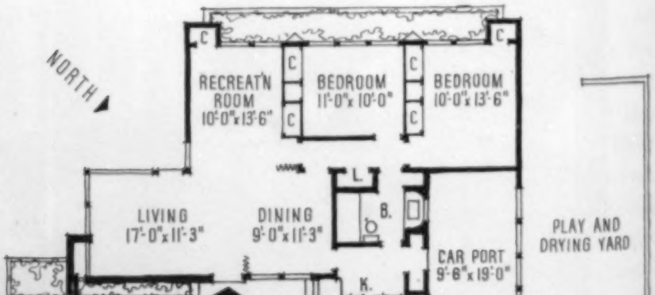

Removable plywood partition
BEDROOM
10'-6"x 13'-3"
BR
8'-3"x 9'-1"
BR
8'-3"x 9'-1"
WDRB
WDRB
HTR
K
7'-8"x
10'-4"
C
STORAGE
GARAGE
14'-0"x 19'-3"
LIVING ROOM
20'-0"x 12'-8"
WARDROBE
TOOLS
C
PLAY ROOM
19'-8"x 8'-11"
DINING
7'-8"x 6'-0"
STORAGE
TERRACE
NORTH
0
5
10
15
20
25

South Bend, Ind. house; L. Morgan Yost, architect, top left; below, Andrew S. Place, builder. Even though Yost, working from his Kenilworth, Ill. office, could not supervise construction closely, the house is eminently livable. Below left, terrace; right, living room

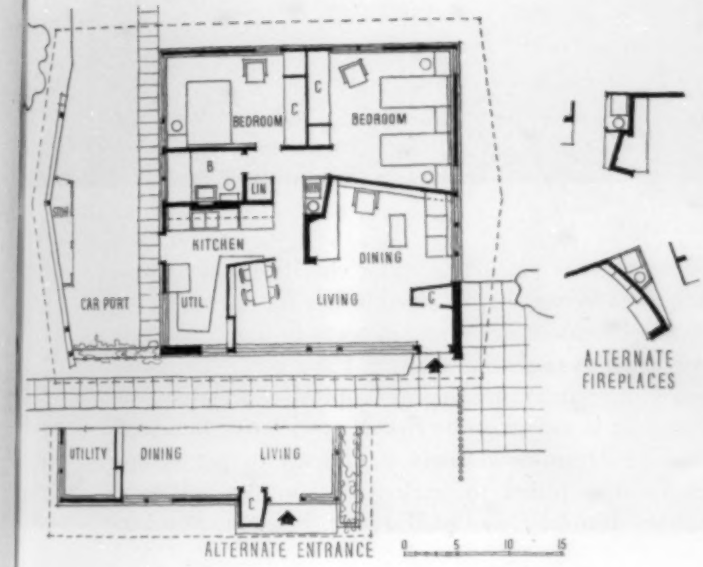
Houston, Tex. house; below, Karl Kamrath and Frederick J. MacKie, Jr. (MacKie & Kamrath, architects); Frank W. Sharp, builder

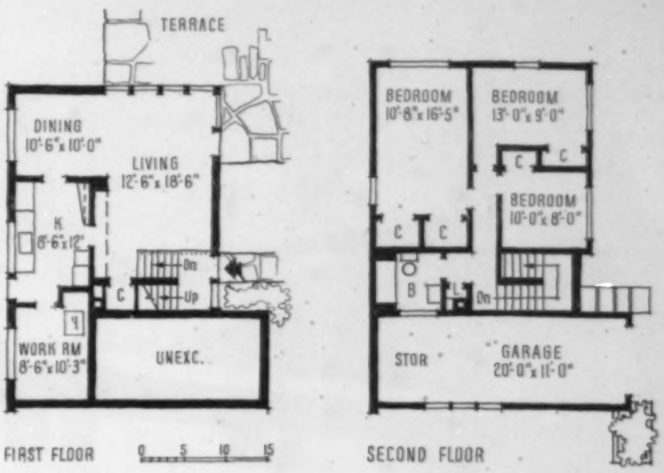
Paul Peters Photo

Due to folding partitions between recreation, dining and living rooms, the Houston house affords variation in use of living space


C
C
NORTH
RECREAT'N
ROOM
10'-0"x 13'-6"
C
C
BEDROOM
11'-0"x 10'-0"
C
C
BEDROOM
10'-0"x 13'-6"
L.
B.
LIVING
17'-0"x 11'-3"
DINING
9'-0"x 11'-3"
PLAY AND
DRYING YARD
CAR PORT
9'-6"x 19'-0"
K.
9'-3"x 13'
C
C
0
5
10
15
20

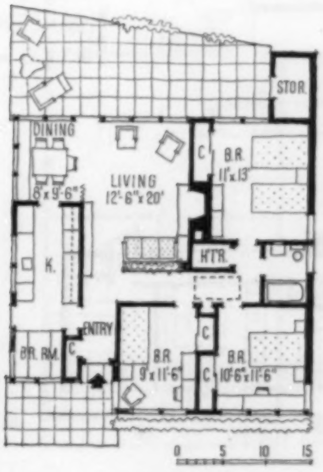
Denver, Col. house by Eugene D. Sternberg, Associate Professor of Architecture and Planning, University of Denver. Builder Edward B. Hawkins is starting Arapahoe Acres development with nine minimum houses using one basic plan


BEDROOM
C
C
BEDROOM
B
LIN
KITCHEN
DINING
CAR PORT
UTIL
LIVING
C
ALTERNATE FIREPLACES
UTILITY
DINING
LIVING
C
ALTERNATE ENTRANCE
0 5 10 15

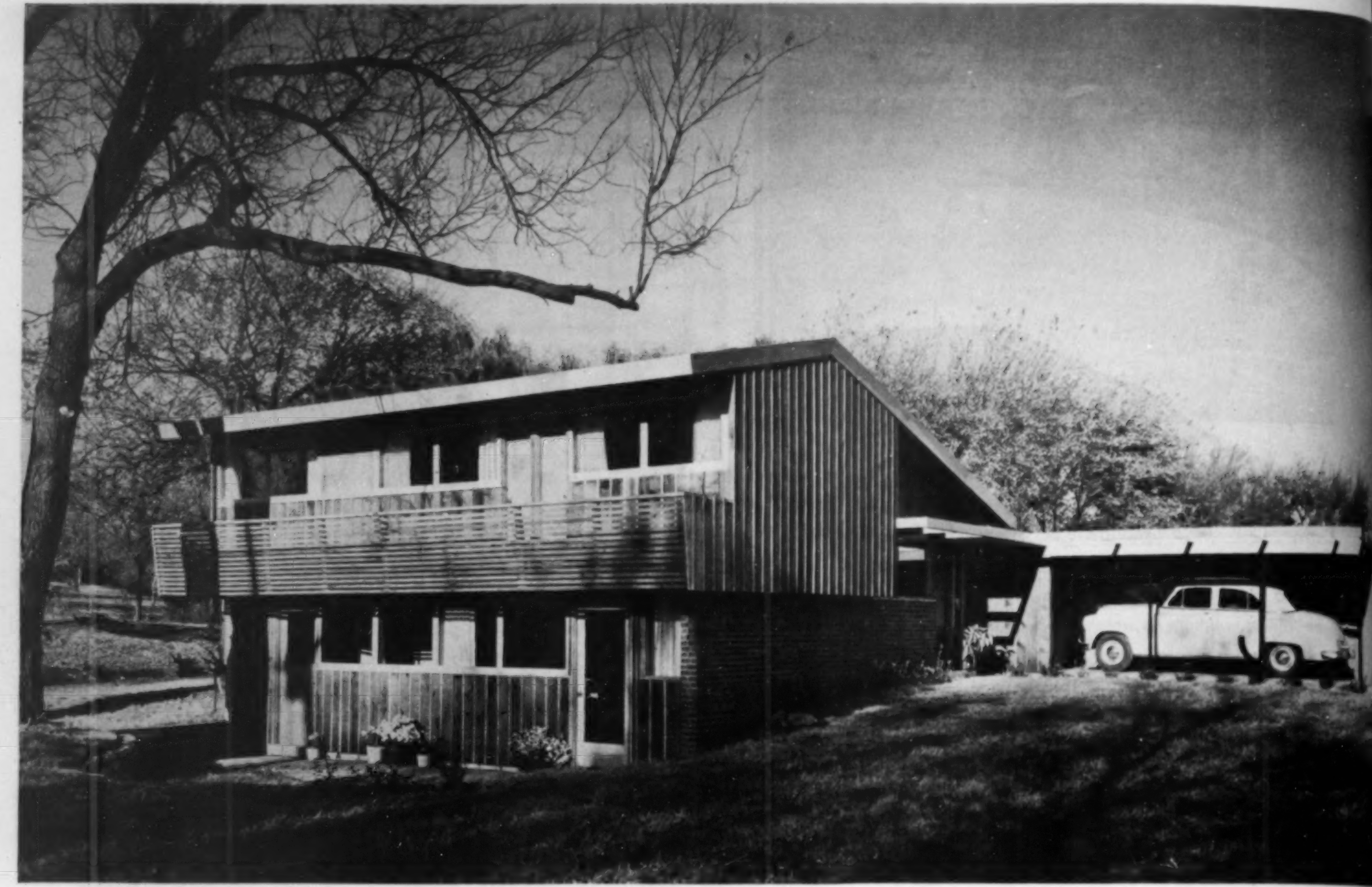

TERRACE
DINING 10'-6"x10'-0"
LIVING 12'-6"x18'-6"
K 8'-6"x12'
Dn
Up
C
WORK RM 8'-6"x10'-3"
UNEXC.
FIRST FLOOR
0 5 10 15
BEDROOM 10'-8"x16'-5"
BEDROOM 13'-0"x9'-0"
C
C
BEDROOM 10'-0"x8'-0"
C
C
B
Dn
STOR
GARAGE 20'-0"x11'-0"
SECOND FLOOR

In Pittsburgh, Pa. architect John A. Grove, Jr. (left below) and builder Noble S. Clay (right below) produced a two-story house. Though the architect received an adequate fee and considers it a step in the right direction, he feels that all that was achieved was the familiar speculative house with flat roof and picture windows

Bethesda, Md.; left, Robison Heap of Sweeley, Heap & Gauger, architects; bottom, Carl M. Freeman, builder


STOR
DINING
8'x9'-6"
LIVING 12'-6"x20'
C
B.R. 11'x13'
HTR
K.
ENTRY
BR. RM.
C
B.R. 9'x11'-6"
C
C
B.R. 10'-6"x11'-6"
0 5 10 15

The Denver house was a first experience in collaboration for both builder and architect; the architect's office for the South Bend house was miles away; architects of the Bethesda house worked at an hourly rate (based on their required yearly income, with total hours necessary estimated in advance) and visited the site twice during construction — hardly full collaboration, yet the builder felt he got full value. Criticisms of Denver and Bethesda houses in particular: small space, notably in bedrooms, especially for families with children; builders' cost accounting could be improved; kitchen, living and dining layouts generally good. Denver house, it was felt, was $1000 overpriced at $11,500, though better looking than adjacent non-architected houses; it was FHA-approved up to $9500, close to the figure the architect aimed at; it has radiant, warm air floor panel heating, fairly good storage space.



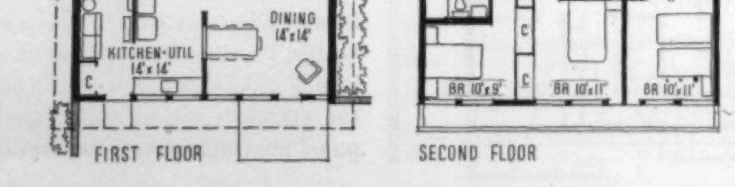
Of all the Revere Houses, that in Kansas City, first of contemporary builders' houses of moderate cost in the area, opened for exhibit in the fall of 1949, is probably most significant. It was built on land subdivided by the powerful J. C. Nichols Co., whose name is widely respected as a synonym for good, sound Colonial houses. It was designed for a moderate-income family, for a standard minimum lot (60 by 125 ft), to comply with local subdivision zoning practices and building codes — but not without struggles.

The builder found the Revere Quality House program well worth while even though there were only 3000 paid admissions (at 40¢ each, for charity) to the house exhibition; from it he obtained orders for seven houses "ahead of foundations," and expects to find a delayed stimulation to sales this summer. The seven orders have given him security; by making capital of architectural services he is reducing the risk of speculative building.

Builder Drummond finds it difficult to get a top-rank local architect to work with him. In this case, architect Runnells was paid $2000, maintains he lost

KANSAS CITY HOUSE

Berline photo

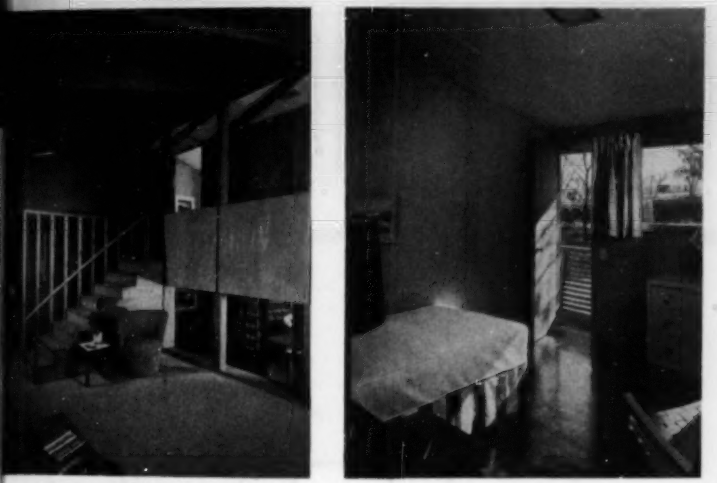


Architect, David B. Runnells, top left; builder, Donald H. Drummond, lower left. House is split-level, designed for a variety of sites in gently rolling country. House sells for $15,100 with landscaped plot

Architect of Cleveland house (facing page), W. D. Riddle, top; builder, Maurice J. Fishman, bottom, has built 44 Revere houses on one varied plan, uses pre-assembled roof trusses

Hedrich-Blessing photos

Above and left below, living room, Kansas City house; right below, bedroom



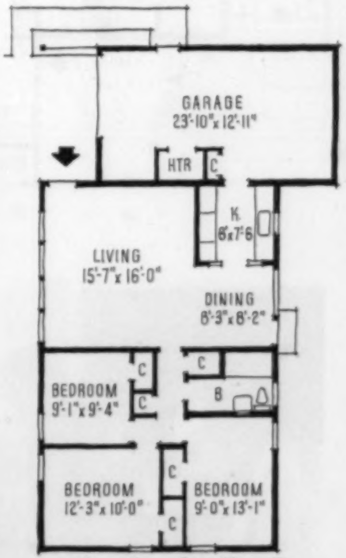
money on the job (this may be due to circumstances detailed below) and agreed reluctantly to design more although the builder, well aware of the value of a good architect, has built up a demand for both less expensive and more expensive contemporary houses. The builder wants to work closely with his architect, to get "space, beauty and utility at a price the market will bear," to use his own words. He wants the architect's respect for his own knowledge of costs and public desires.

Drummond would build the same house elsewhere in the same subdivision at the same price, but not 5 miles away at any price, because he might lose the profit on his initial group through being out of touch with it at a crucial moment — which is a comment emphasizing the craftsman's approach characteristic of the whole housebuilding business. The original design of the house met all building code requirements, but (again we quote Drummond), "We did have one devil of a time with J. C. Nichols Co. on esthetic grounds. The original butterfly roof had to be changed. FHA based their approval on approval by Nichols. Since the success of the Revere House we have received permission from Nichols to build two trial flat-roofed homes. This should be recorded as a smashing, completely unprecedented victory."

At first FHA approved a $10,600 loan; when several had been sold, FHA promptly raised the amount to $11,600. The Veterans Administration set a fair sales price. The Topeka FHA office has brought numerous visitors to the project and seems, privately, pleased with itself for permitting it. The only serious hitch in the proceedings came when the architect, after consulting with Revere Quality Houses, sold a set of plans to another builder who said he would build in another city, but built not ten blocks from Drummond's project.

CLEVELAND HOUSE

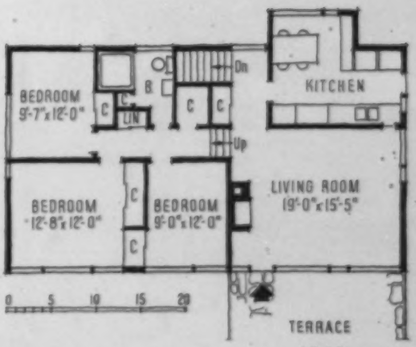
Miller-Ertler photos

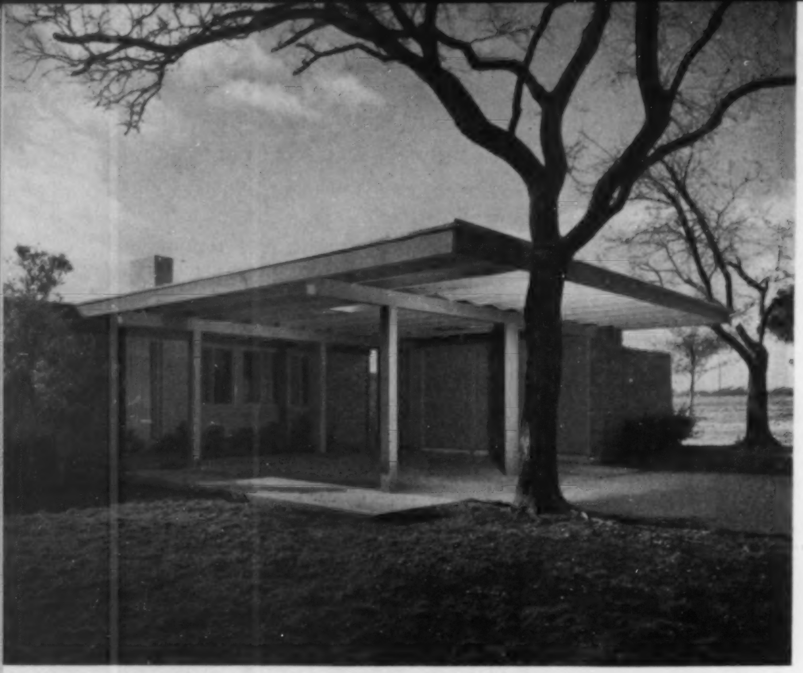


BOSTON HOUSE

Egone photo

Architect, Samuel Glaser, above left; builder, Arnold Hartmann, above right. Boston house, another split-level plan (entry, heater, etc. below bedrooms) designed to sell for $15,500

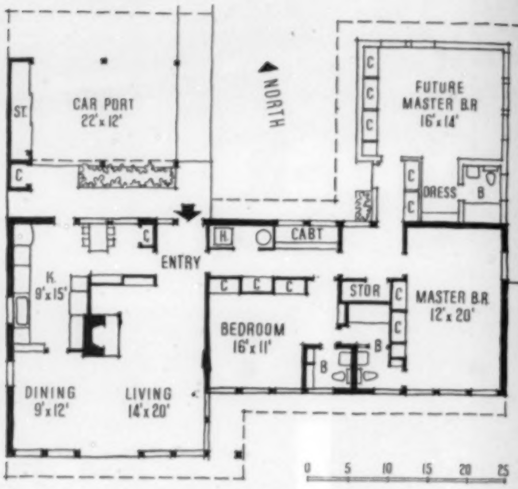




Meisel Photo

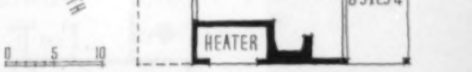
Angus G. Wynne, Jr., American Home Realty Co., builder of the Revere house in Wynnewood, Dallas, Tex., employs architects to obtain good planning and prestige; is noted for his accurate cost accounting. Architects were DeWitt & Swank, who have done 400 houses for Wynne

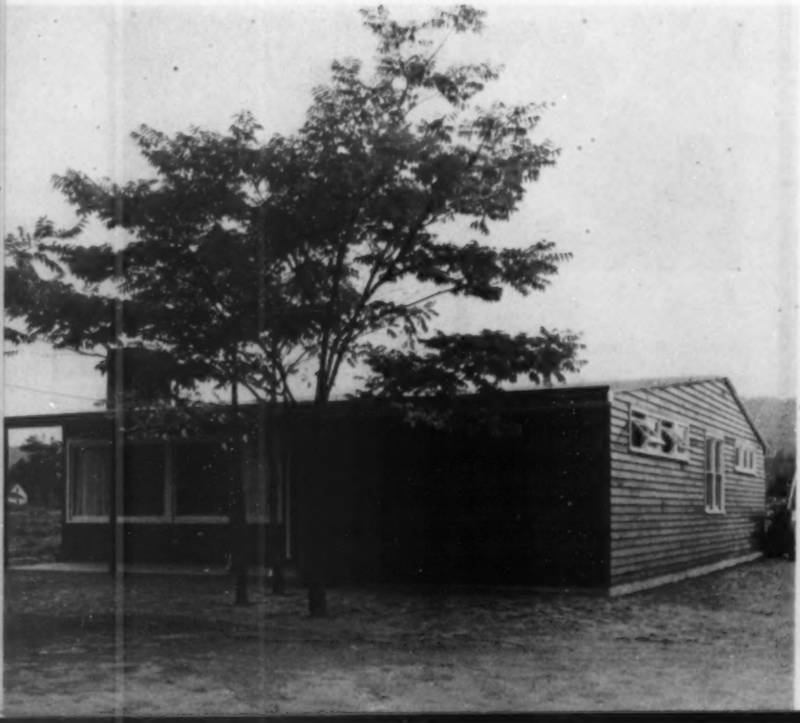
Hayes Photo


ST.
CAR PORT 22'x12'
NORTH
C
FUTURE MASTER B.R 16'x14'
DRESS
B
H
CABT
ENTRY
K. 9'x15'
STOR
MASTER B.R 12'x20'
BEDROOM 16'x11'
DINING 9'x12'
LIVING 14'x20'
0 5 10 15 20 25

Here trusses and certain wall sections were prefabricated. Builder has worked often with DeWitt & Swank, builds 175 architect-designed houses in a good year. Architects find compensation on cost-plus-fixed-fee basis, proportioned according to number of houses built from one plan, satisfactory

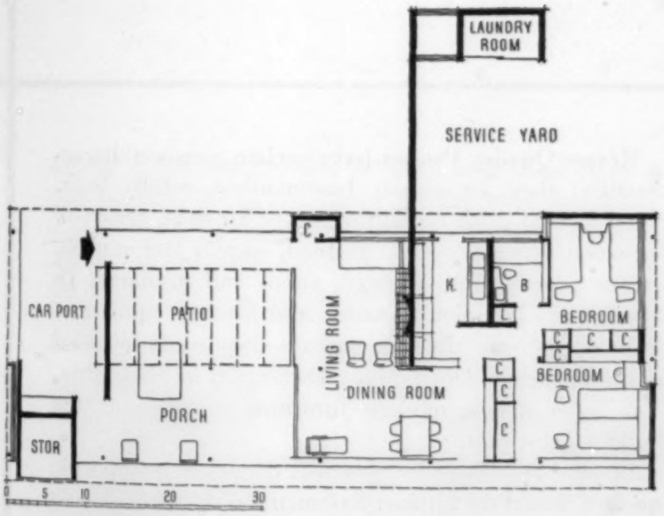
Springfield, N. J. house, built by Hawley Jaquith (left below) and W. T. Smith, Jr. (right), architect, Kenneth Kassler (center). Like many Revere houses, it is built on a concrete slab, has radiant panel heating, oil burner, glass fiber insulation


GARAGE 19'-7"x13'-0"
BEDROOM 9'-10"x13'
BEDROOM 12'-7"x13'
C
STOR
K. 12'-5"x8'-2"
DINING
FUTURE BR 12'-7"x7'-10"
LIVING 15'-4"x23'-4"
NORTH
P. 6'3"x23'4"
HEATER
0 5 10

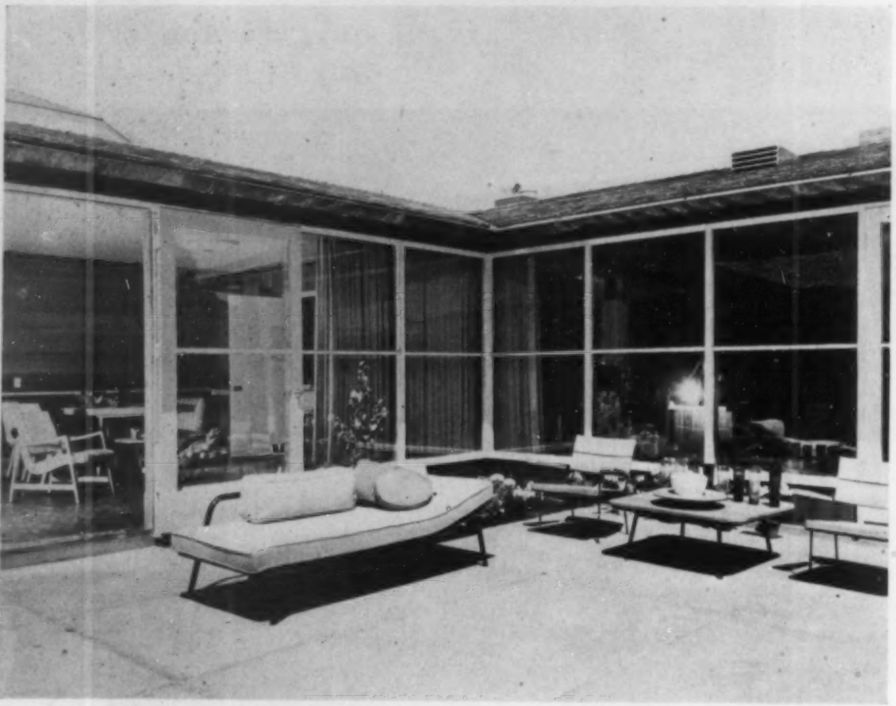


Steinmetz photo

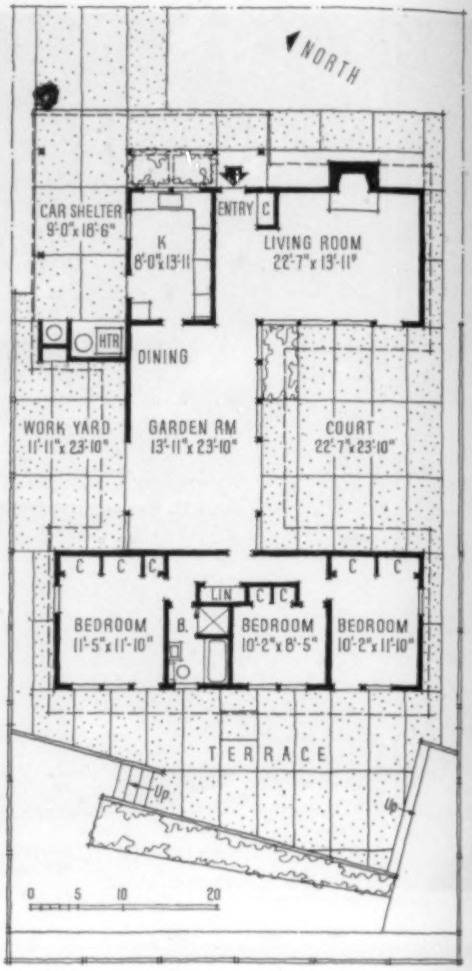
The Sarasota, Fla. Revere house, designed by architects Twitchell & Rudolph (Twitchell at right below) and built by J. E. Lambie, Jr., Lamolithic Industries (left). House, monolithic concrete, was produced on location by a portable field plant (automatic high-capacity mixers, conveying and handling machinery) and modular steel forms which permitted complete flexibility in design. A mobile cabinet-making plant turned out finished woodwork on the site. House is carefully designed for the climate


LAUNDRY ROOM
SERVICE YARD
C
CAR PORT
PATIO
LIVING ROOM
K.
B
BEDROOM
C
C
C
C
C
BEDROOM
C
C
C
DINING ROOM
PORCH
STOR
0
5
10
20
30

Lucia Photo



Foreman's Photo

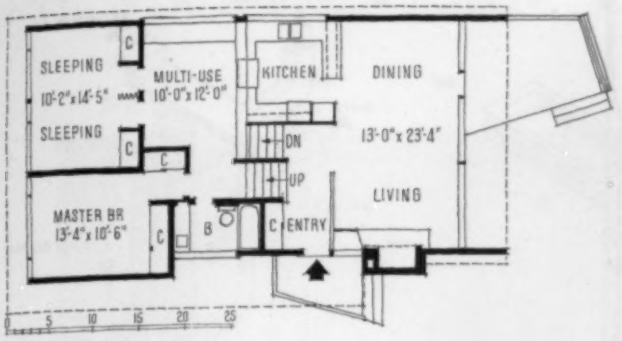

NORTH
CAR SHELTER
9'-0" x 18'-6"
K
8'-0" x 13'-11"
ENTRY
C
LIVING ROOM
22'-7" x 13'-11"
HTR
DINING
WORK YARD
11'-11" x 23'-10"
GARDEN RM
13'-11" x 23'-10"
COURT
22'-7" x 23'-10"
C
C
C
BEDROOM
11'-5" x 11'-10"
B.
LIN
C
C
BEDROOM
10'-2" x 8'-5"
BEDROOM
10'-2" x 11'-10"
C
C
TERRACE
Up
Up
0
5
10
20

The Tintype, Foreman's Photos

San Francisco house, Joseph Esherick, Jr., architect (left above), George F. Williams and Frank F. Burrows, builders (center and right), tackles the most difficult subdivision problem: a small interior lot, 50 by 100 ft. Plan encloses much of the area to form a private outdoor living room. Builders are enthusiastic about architectural services, land planning, engineering; have found such services cost little. Architect's story is different: because the problem was so difficult, requiring so much time, drafting and overhead consumed his entire fee

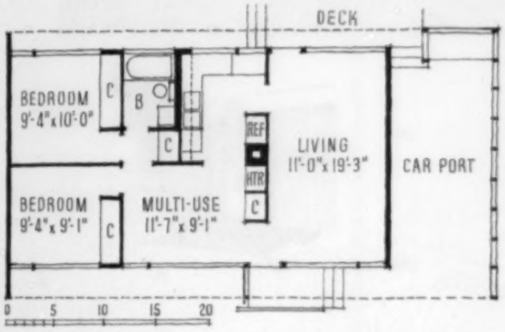
Revere Quality Houses have certain common characteristics: they are mostly basementless, solidly built, wood framed, with radiant or forced air heat, gas or oil furnaces; they are openly planned, employ lots of glass, are in general well oriented, sited, and insulated. In many cases complete laundry and kitchen equipment from refrigerator through garbage disposer is included in the mortgage. One builder, Davenport in Alexandria, Va., even makes modern furniture available at the builders' discount.

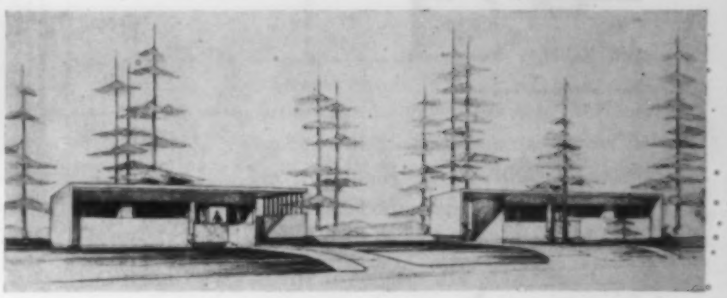
Buyers' reactions: in Syracuse, 84 per cent of people queried would do without basements if that would save money. In San Francisco, of the 27–28,000 people who viewed the Revere House, more than half emphatically liked its layout. The San Francisco buyers don't mind the small bedrooms, because they use them only for sleeping; spacious living area, indoor and out, has revolutionized their way of life. Their children have places where they can play without interfering with adult activities. In San Francisco the housewife does find asphalt tile over concrete hard on her feet (probably because there is no radiant heating), and the roof overhang on the sunny side isn't wide enough. Nevertheless she *loves* the house.


SLEEPING
10'-2"x14'-5"
MULTI-USE
10'-0"x12'-0"
KITCHEN
DINING
SLEEPING
13'-0"x23'-4"
DN
UP
LIVING
MASTER BR
13'-4"x10'-6"
C
B
ENTRY
0 5 10 15 20 25

In Seattle, architects Chiarelli & Kirk (center and right) and builder Albert Balch, Community Builder, did several Revere houses. Plan and photo above show first model, a good house though high priced. Below, plan and rendering, Revere House No. 2, surprising for $9500, well liked but has not sold. Same architects are now doing Little Revere House No. 3 with a pitched roof

Brown Photo


DECK
BEDROOM
9'-4"x10'-0"
C
B
REF
LIVING
11'-0"x19'-3"
HTR
CAR PORT
BEDROOM
9'-4"x9'-1"
MULTI-USE
11'-7"x9'-1"
0 5 10 15 20



Only two of Seattle House No. 2 were built; flat roof scared off buyers

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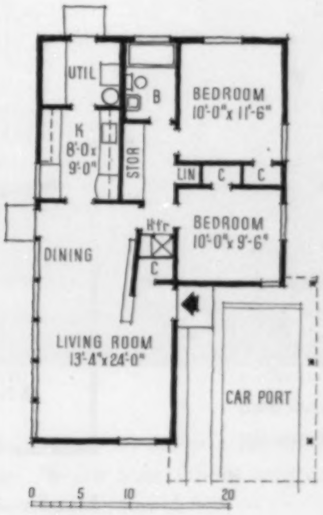
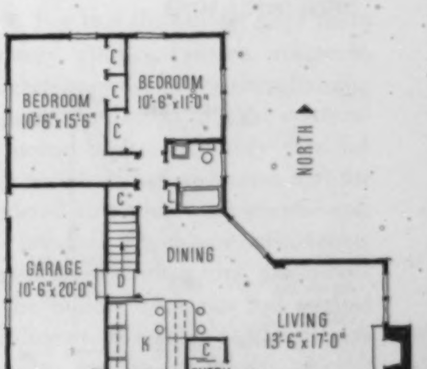
Architect in Salt Lake City was W. Rowe Smith of the office of Fred Markham (first photo below); builder, Alan Brockbank, Federal Homes, Inc. (bottom). This house was shown in greater detail in ***ARCHITECTURAL RECORD*** *for January, 1950. There were two typical plans to suit varying conditions*

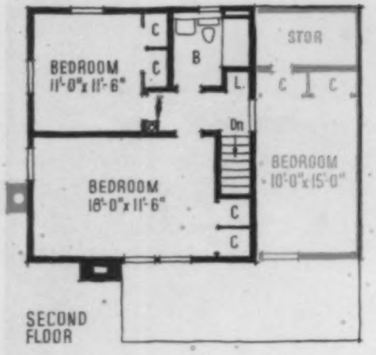
Biddulph Photo

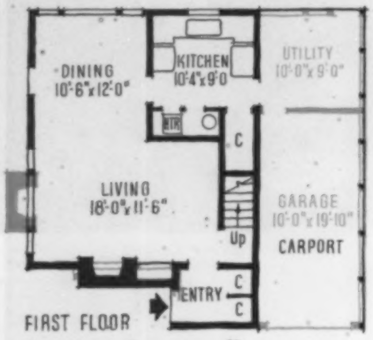

UTIL
B
BEDROOM
10'-0"x11'-6"
K
8'-0"x
9'-0"
STOR
LIN
C
BEDROOM
10'-0"x9'-6"
DINING
LIVING ROOM
13'-4"x24'-0"
CAR PORT
0 5 10 20

Syracuse, N. Y. house, Gordon Schopfer, architect (first below), Andrew Mayer, Mayer & Rebhahn, builder (bottom), has brought both architect and builder valuable publicity in spite of numerous competing local attractions. The architect has designed 65 speculative houses for this contractor

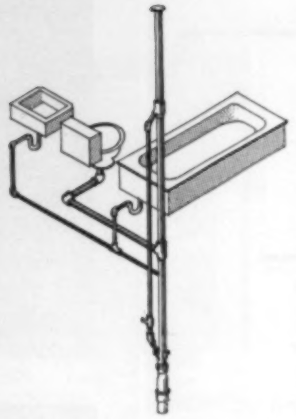
Brewster Photo

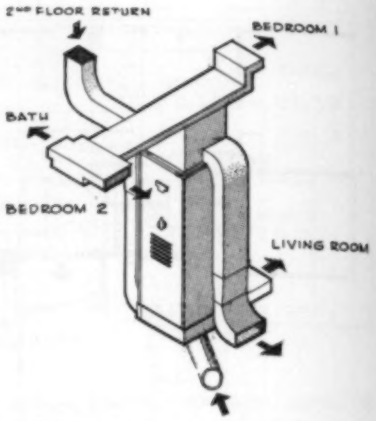

BEDROOM
10'-6"x15'-6"
BEDROOM
10'-6"x11'-0"
NORTH
C
GARAGE
10'-6"x20'-0"
D
DINING
LIVING
13'-6"x17'-0"
K
ENTRY
WD
5 10 15 20


BEDROOM
11'-0"x 11'-6"
C
B
C
L
STOR
C
C
Dn
BEDROOM
18'-0"x 11'-6"
BEDROOM
10'-0"x 15'-0"
C
C
SECOND FLOOR

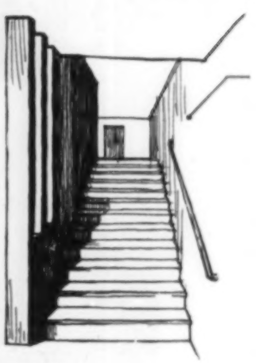

DINING
10'-6"x 12'-0"
KITCHEN
10'-4"x 9'-0"
UTILITY
10'-0"x 9'-0"
HTR
C
LIVING
18'-0"x 11'-6"
GARAGE
10'-0"x 19'-10"
CARPORT
Up
ENTRY
C
C
FIRST FLOOR
0
5
10
20

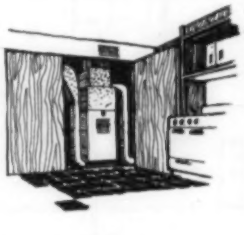
Black lines show basic two-bedroom house ($9990) at The Highlands; red, additions forming three-bedroom model ($12,140); over 20 variations are available

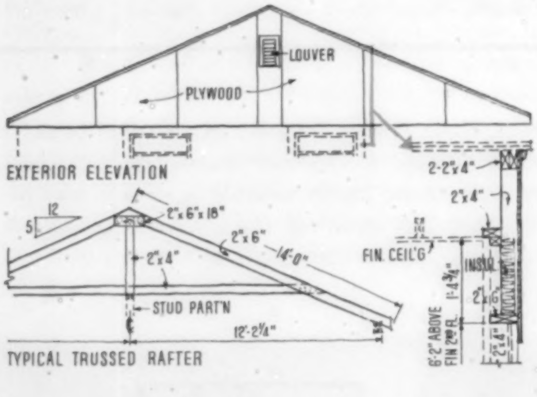


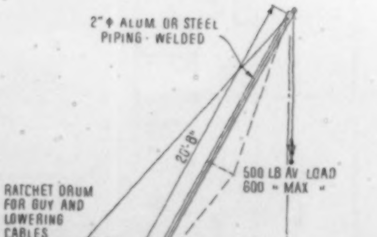

2ND FLOOR RETURN
BEDROOM 1
BATH
BEDROOM 2
LIVING ROOM

Preassemblies used: left above, shop-fabricated copper plumbing "tree"; framing is designed around it to minimize cutting. Left below, prefab stair; above, warm air heater and complete prefab ducts; chimney is also prefab. Below, heater in kitchen closet

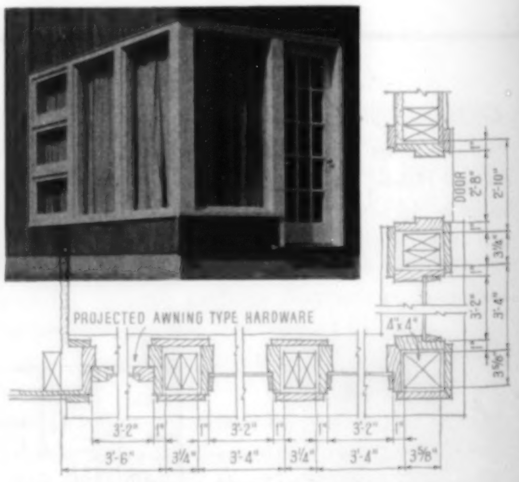


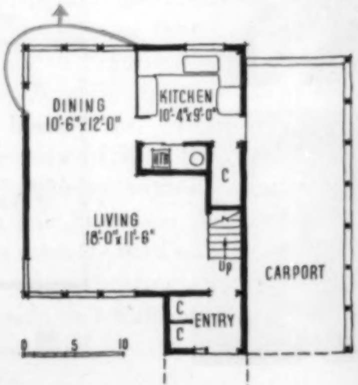



LOUVER
PLYWOOD
EXTERIOR ELEVATION
2-2"x 4"
2"x 4"
12
5
2"x 6"x 18"
2"x 6"
14'-0"
2"x 4"
FIN. CEIL'G
INSUL
1'-4¾"
2"x 6"
STUD PART'N
12'-2¼"
6'-2" ABOVE FIN 2ND FL.
2"x 4"
TYPICAL TRUSSED RAFTER

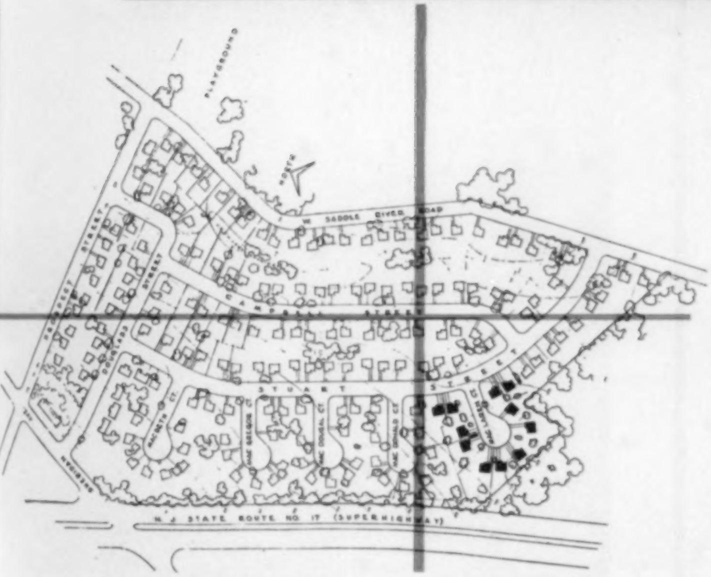

2" ϕ ALUM. OR STEEL PIPING - WELDED
20'-8"
500 LB AV LOAD
600 " MAX "
RATCHET DRUM FOR GUY AND LOWERING CABLES
ELEC CAPSTAN
10'-0" AT 60°
6" [
6" [
3"x 3"x ½" Ls
1200 LB LEAD COUNTER WEIGHT
WHEEL TROLLEY & TRACK
0
5
10
20

More preassemblies: left above, trussed rafters and gable ends erected by special truck-mounted aluminum crane designed by the architects; right, large windows (optional) with shop-fabricated rough frames, site-applied casings


DOOR 2'-8"
2'-10"
1"
3⅛"
1"
3'-2"
3'-4"
1"
3⅝"
4"x 4"
PROJECTED AWNING TYPE HARDWARE
3'-2"
1"
1"
3'-2"
1"
1"
3'-2"
1"
3'-6"
3¼"
3'-4"
3¼"
3'-4"
3⅝"


DINING
10'-6"x 12'-0"
KITCHEN
10'-4"x 9'-0"
HTR
C
LIVING
18'-0"x 11'-6"
Up
CARPORT
C
ENTRY
C
0
5
10

CASE STUDY: 250-HOUSE N. J. DEVELOPMENT

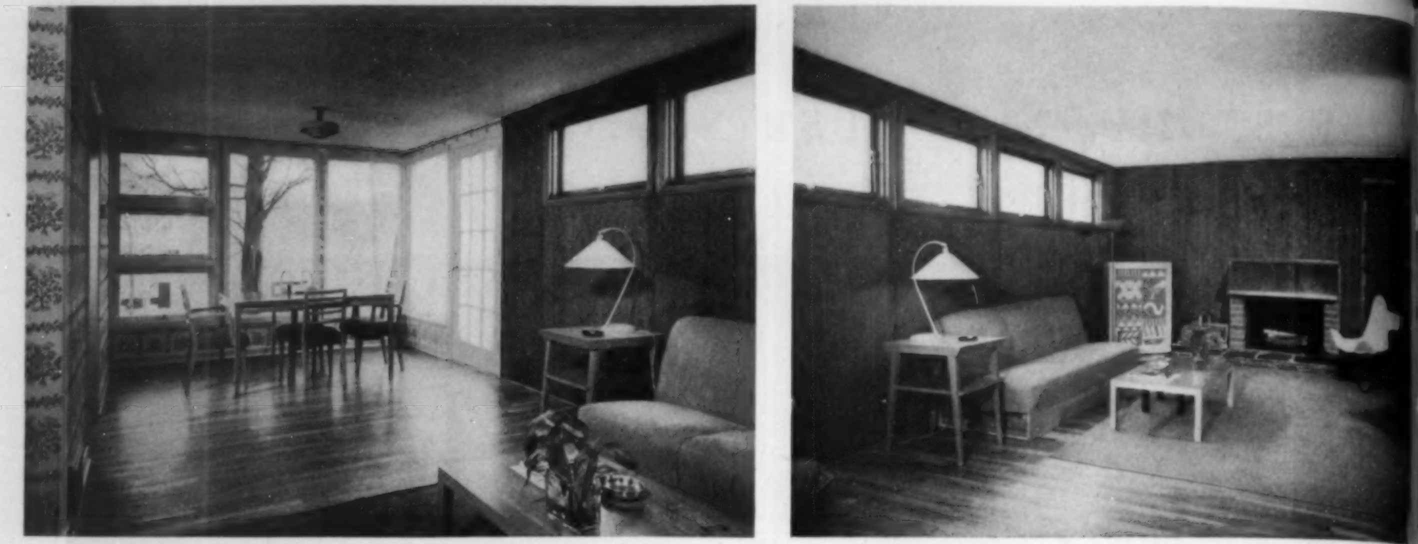


The Highlands, Waldwick, N. J.; Petroff & Clarkson, architects; Zamore Builds, Inc., developer and builder; A. Carl Stelling Assoc. and John R. Tregenza Assoc., site planners; Canger, Bailey & Assoc., site engineers.

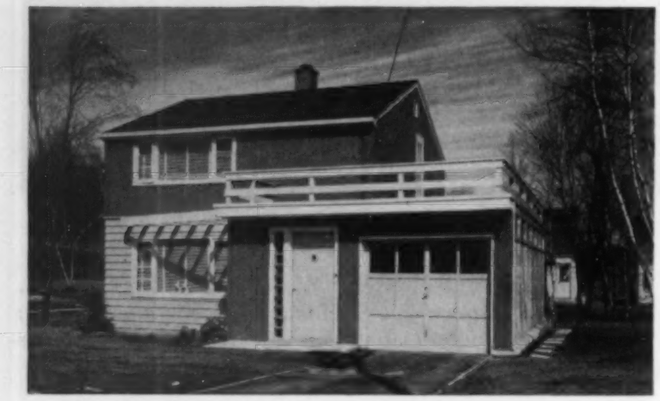
In its recent approval of this entire subdivision Revere Quality Houses cited the excellent site plan, quality of construction, technical advance; buyer participation, under developer's control, in decisions on exterior treatment; and architect-builder cooperation. When completed The Highlands will have 185 houses; there is a plan for extending it to the adjacent Saddle River. Under a comprehensive builder-architect agreement, the architects render services starting with advice on site selection; also, promotion to aid in obtaining financing; site planning and development; design of a job shop to become, later, a shopping center (and other buildings required); drawings for and consultations on newspaper advertising; design of a basic house and numerous variations; consultations with house buyers on exterior painting, etc. For this the builder pays them a flat fee for preliminary studies (advice, research, organization of data, preliminary design); a site planning fee prorated according to number of houses contemplated; a flat fee per house built; an hourly rate for working drawings of all non-dwelling structures and for consulting services rendered to builder and purchasers; and reimbursement for unusual travel and subsistence, and fees for special consultants (landscaping, etc.). This arrangement permits the builder to make full capital of all the architects' abilities and assures the architects fair compensation. It also insures top-notch results: The Highlands won first place in its class in the recent subdivision contest conducted by National Association of Home Builders — the only eastern development so honored in the contest.

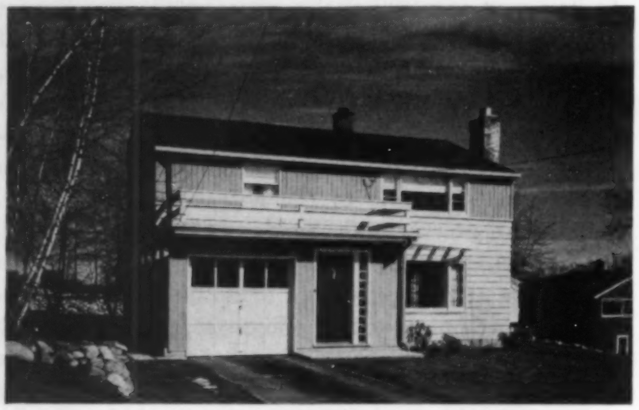
Molitov photo

Only shed-roofed house in Highlands cost owner a reasonable premium for variations. Builder Zamore gives 90-day warranty, has excellent reputation for making good any defects



Above left, dining area; right, living area, specially treated in shed-roofed house (see previous page)

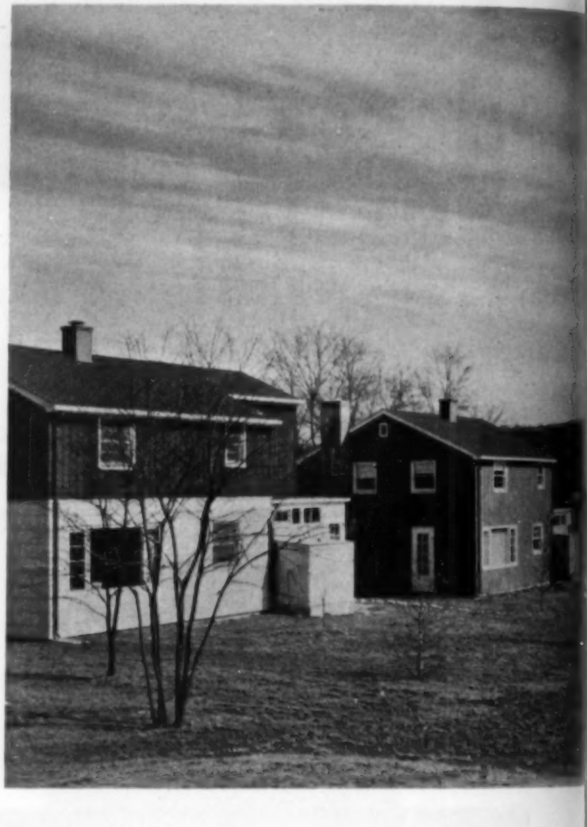




CASE STUDY: NEW JERSEY DEVELOPMENT

Photos by Chidnoff, da Silva, Master Portrait

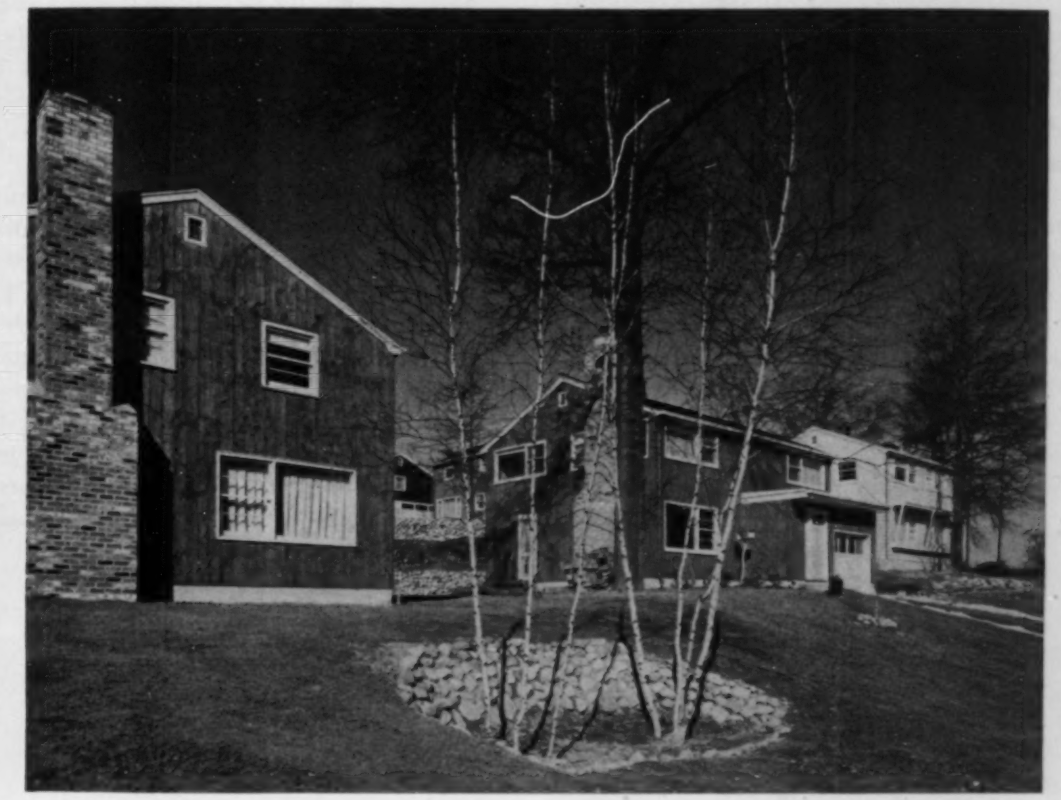
Left and center, architects Serge P. Petroff, Harvey Clarkson; right, builder B. V. Zamore, whose sons David P. and Richard W. Zamore are associated with him



Joseph Malitor Photos

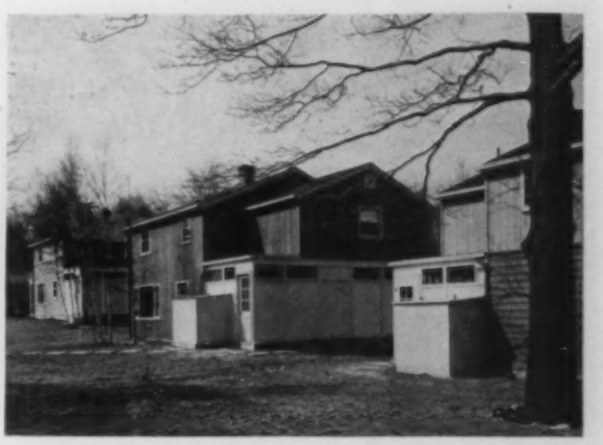
The several owners interviewed are mostly professional and business people with good incomes. Cars are plentiful so distance to shopping is no problem; number of children from Highlands homes is limited, but Town of Waldwick provides special school bus service to the area. With a normal increase in child population normal difficulties will probably arise and be solved. About individual houses, owners are well satisfied. One, an electrical engineer, was especially pleased to find, when he snooped around during building, construction sounder than he expected. The open, L-shaped living area and large, sunny windows are particularly appreciated; only one housewife was wistful about lack of

Above left, typical bedroom; right, third bedroom used as guest room-study—both in average houses



Individual houses, though close together and rather similar in appearance, benefit from carefully informal siting

separate dining room, and two owners with north-facing picture windows said they'd rather pull drapes during a cold blow than lose the rural view. More bath space is sometimes wanted; several downstairs toilets are going into utility rooms. Kitchens seem adequate, though one woman wanted more space. Storage, which seems skimpy, appears adequate to most owners (possibly because there are relatively few children); utility rooms are being used as darkrooms, panelled studies, workshops or laundries, as well as for utility functions. Above-ground fuel oil tank enclosures (photo right) are being replaced by buried tanks now that possible use of gas for heating has been ruled out.



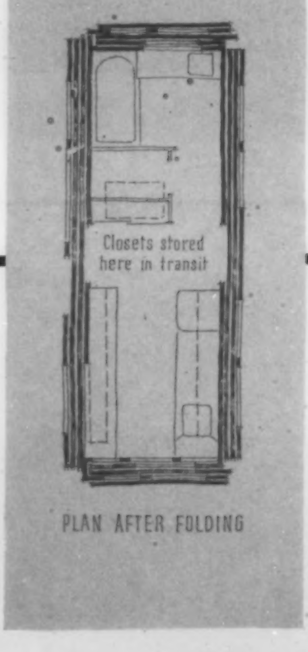
III. PREFABRICATION: THE ACORN HOUSE

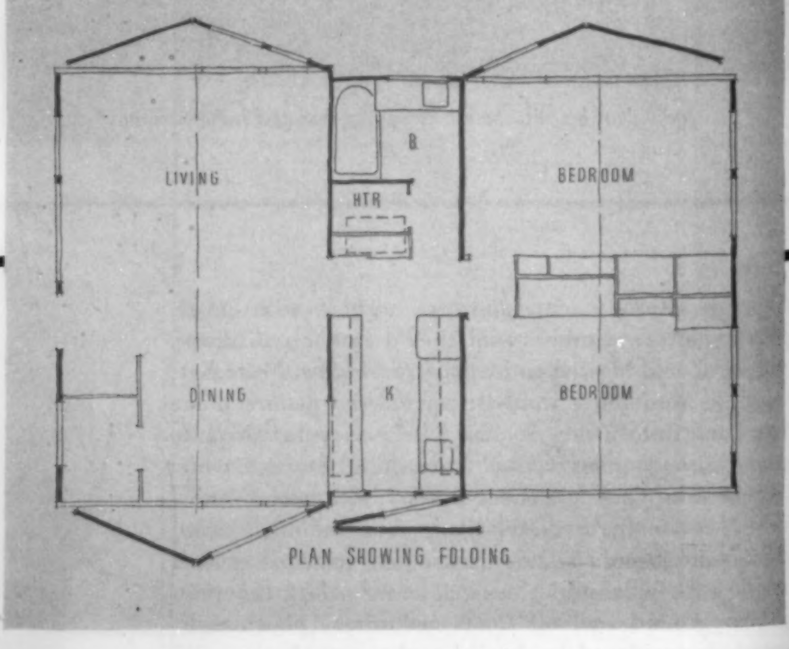
LATE IN 1948 a trailer truck hauled the package — roughly 8 ft wide, 9 ft high, 23 ft long — shown at left below to an apple orchard on the edge of Concord, Mass. A small crew of men unfolded wall, floor and roof panels and by nightfall the Acorn House on the opposite page was ready for tenants. For over a year it has been lived in by a "guinea-pig" family who have carefully tested its livability under all sorts of conditions. Now, in early 1950, components of a smaller version of this prototype Acorn House are being produced in quantity to fill orders for summer cottages and motels.

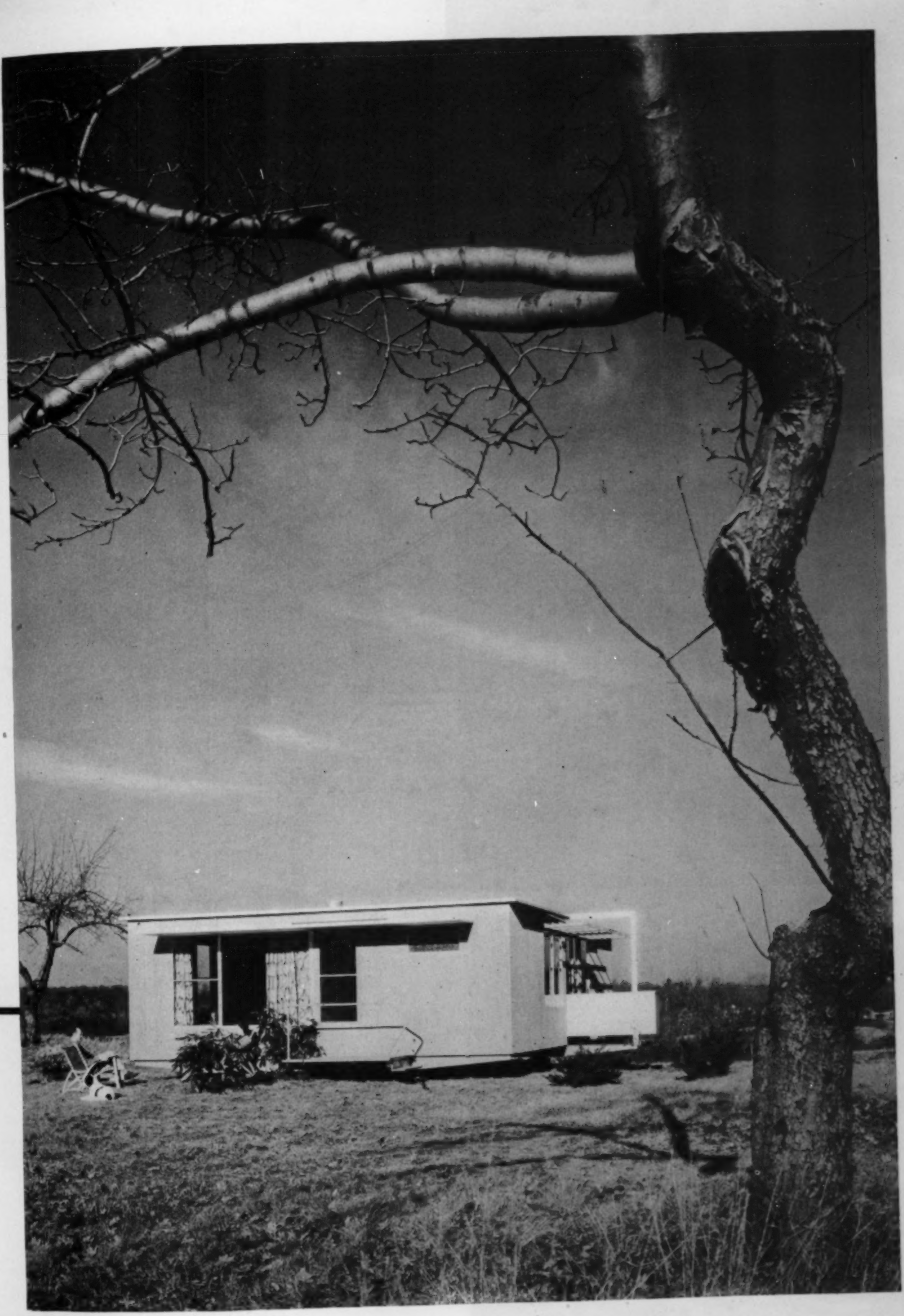
Of course the story begins well before 1948. Before World War II was over, Carl Koch, well-known architect who was then still in the Navy, was engaged in a long-distance collaboration with civilian architects John Hancock Callender and Huson Jackson, working on the principle of the folding house. In 1946 John Bemis, M.I.T.-trained engineer, added his talents. (Callender and Jackson, not now active in Acorn Houses, retain interest though they are otherwise occupied.) In the interim the country has seen a rash of interest in prefabs of which little is now evident beyond an occasional itch. Konrad Wachsmann's promising General Panel Corp. ran into difficulties with panel joints. Lustron has produced many porcelain-on-steel houses, has had ample publicity and some success in creating favorable opinion, but early this year suffered an apparently incurable attack of financial sickness. Most recently the John B. Pierce Foundation of Raritan, N. J., long-time prefab researchers, has made preliminary announcement of a new prefab system. That Acorn has kept going doggedly while the fortunes of so many in this uncertain field were rising and falling is due chiefly to the work and faith of Koch, Bemis, Calvin P. Bartlett, the corporation's general counsel and Winsor Gale, salesman. It has cost a lot of money, though nowhere near as much as distended Lustron swallowed.

No thoughtful person can help but admit, on a purely rational basis, the validity of the familiar arguments for house prefabrication; boiled down, these are essentially the principles enunciated by Henry Ford for mass-producing horseless carriages. No one can deny, either, that fanatic faith in industrial production of houses has done both harm and good to the concept. Many a businessman today feels like saying, "I told you so!" when reminiscing about federal aid to prefabs in the immediate postwar years. Prefabricators still active,

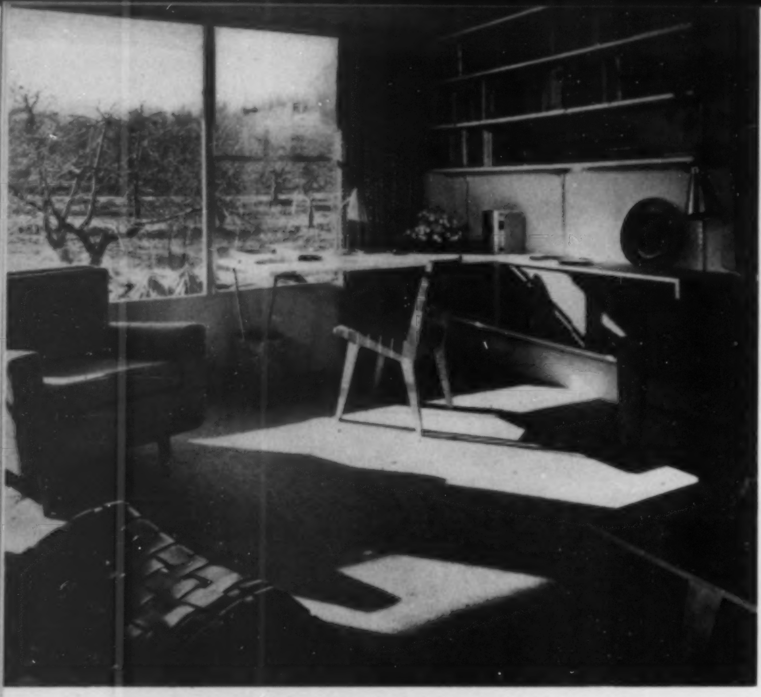
(*Text continued on page 158*)





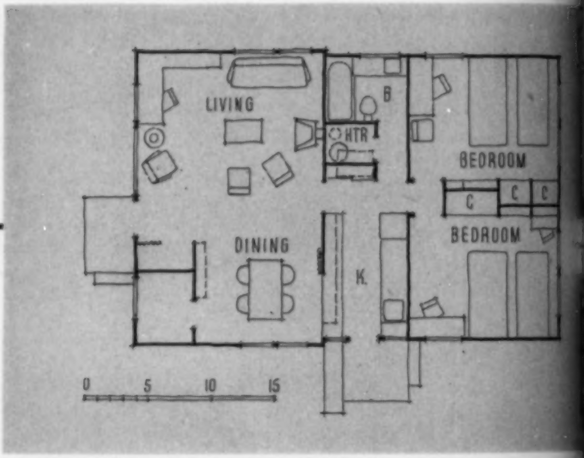


Ezra Stoller Pictor



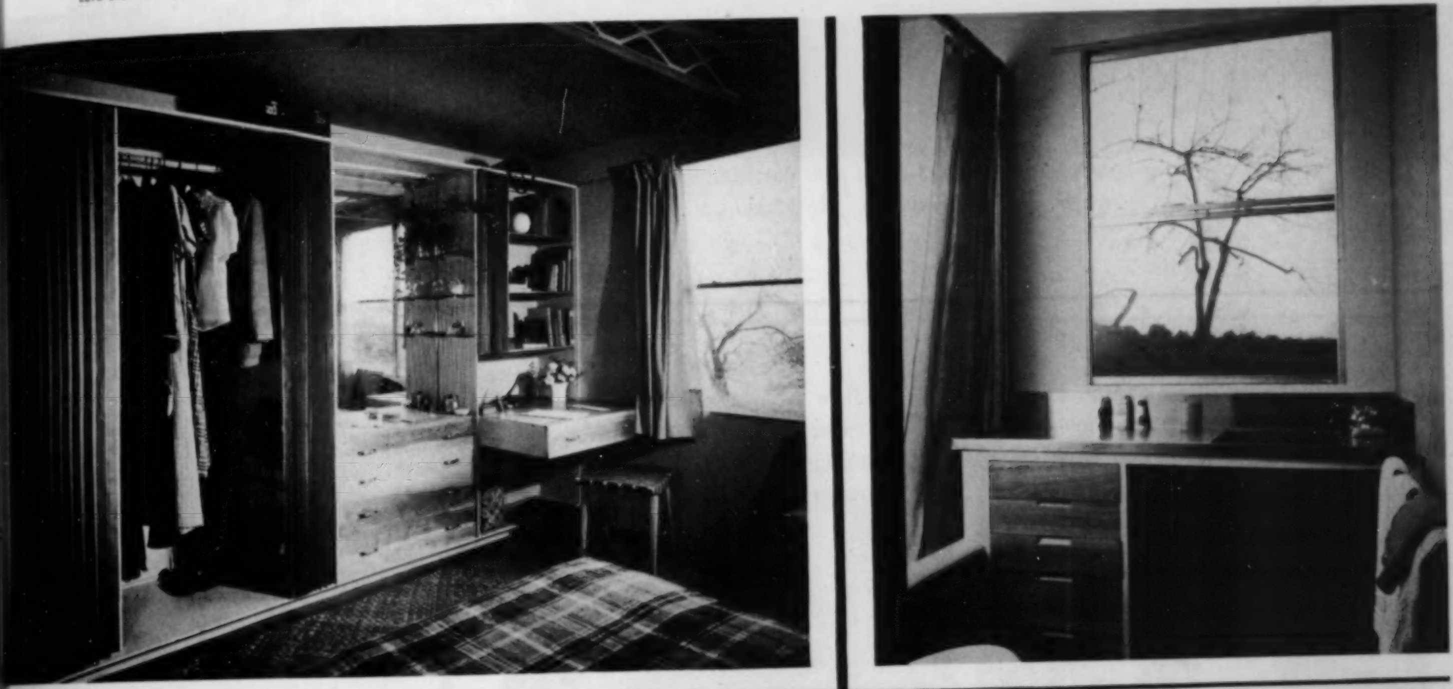
THE ACORN HOUSE

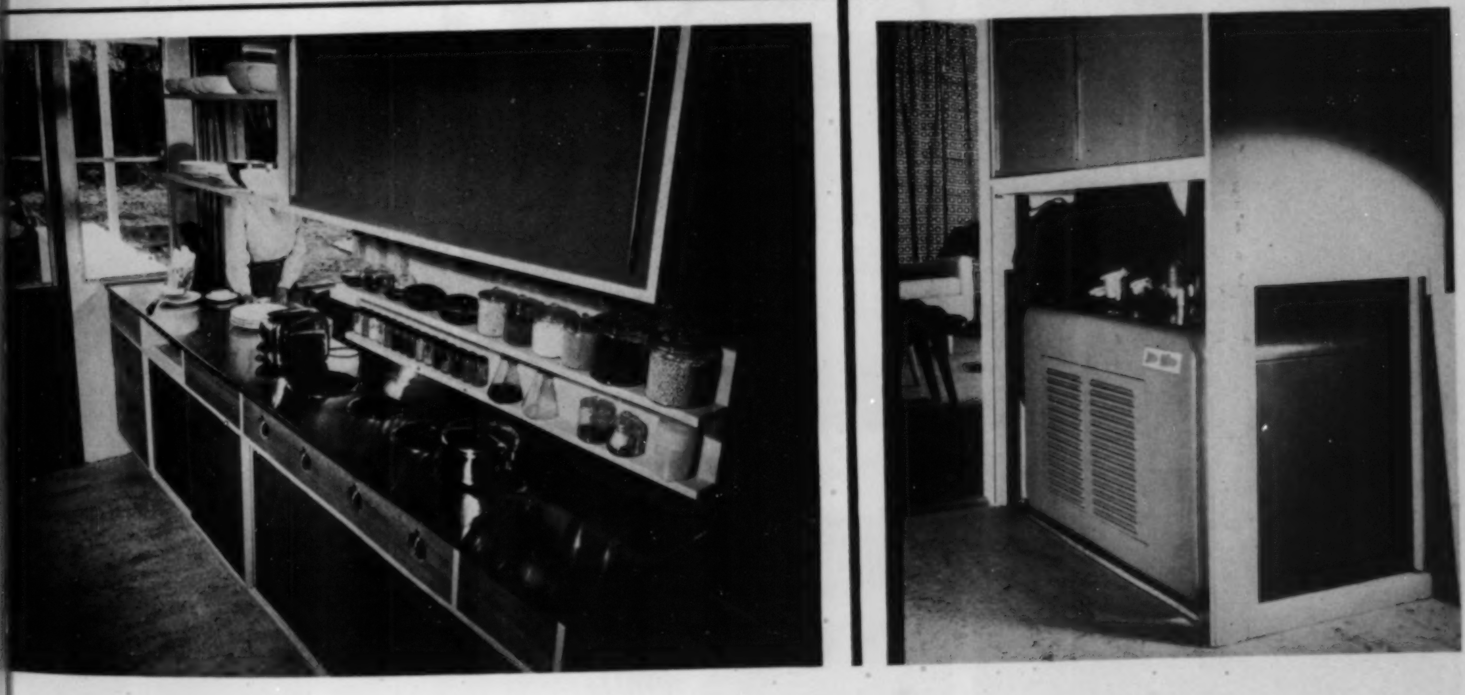
Space within The Acorn House may seem small, but when we visited the demonstration model one day this past winter we discovered that there is no cramped feeling. Perhaps this is partly because so much furniture and equipment, ordinarily portable, is built in. Photos at left: top, living room; center, living room showing prefabricated fireplace; bottom, dining area. Note the exposed open-web joists used as ceiling trusses; also the intimate relationship between kitchen and dining — another factor which makes the house livable. We had expected some sense of impermanence but, pleasantly, found little such evidence; floors were no more springy than in the average house; windows, other details were small in scale and enhanced the feeling of spaciousness



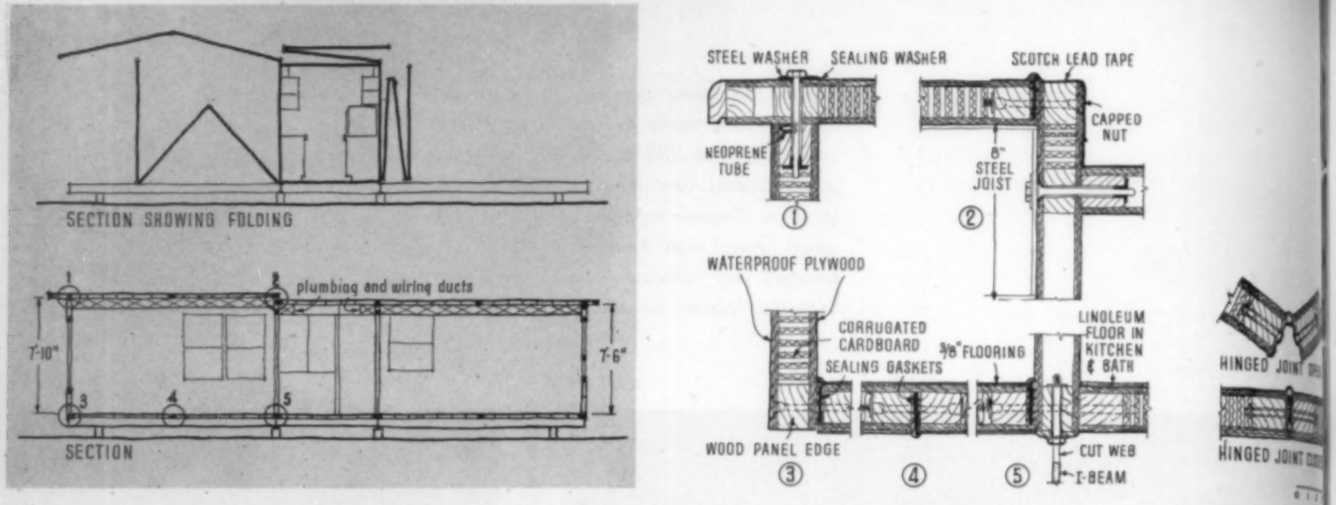
Below are some items of built-in equipment which contribute substantially to The Acorn House. Top left, storage units (capacity 230 cu ft) separate bedrooms, are built of wood frames and tempered hardboard, have sheet metal drawers. Drawer runners are steel, sliding door tracks, hardwood (metal was found too expensive). Bath, upper right; lavatory vent, chrome-plated, forms the shower curtain rod; heat duct passes beneath tub, warming its bottom

Ezra Stoller: Pictor





Kitchen, lower left, extremely compact, has recently-developed individual electric cooking units built into stainless steel top, separate oven set at eye level (no stooping), drawer-type refrigerator, wood and tempered hardboard cupboards, total of 103 cu ft of storage. Heater, lower right, is jet-type hot air, oil fired, set in a closet over a utility pit.


SECTION SHOWING FOLDING
plumbing and wiring ducts
1
2
3
4
5
7'-10"
7'-6"
SECTION
STEEL WASHER
SEALING WASHER
NEOPRENE TUBE
①
SCOTCH LEAD TAPE
CAPPED NUT
8" STEEL JOIST
②
WATERPROOF PLYWOOD
CORRUGATED CARDBOARD
SEALING GASKETS
3/8" FLOORING
LINOLEUM FLOOR IN KITCHEN & BATH
WOOD PANEL EDGE
CUT WEB
I-BEAM
③
④
⑤
HINGED JOINT
HINGED JOINT

Diagrammatic section shows how The Acorn House is unfolded after placement on its light steel subframe. Typical joint details at right also show standard panel construction, corrugated paperboard with alternate layers in opposing directions. Facing is waterproof plywood; edging strips, wood; adhesive, phenolic resin. Roof-joint taping has been improved for later models

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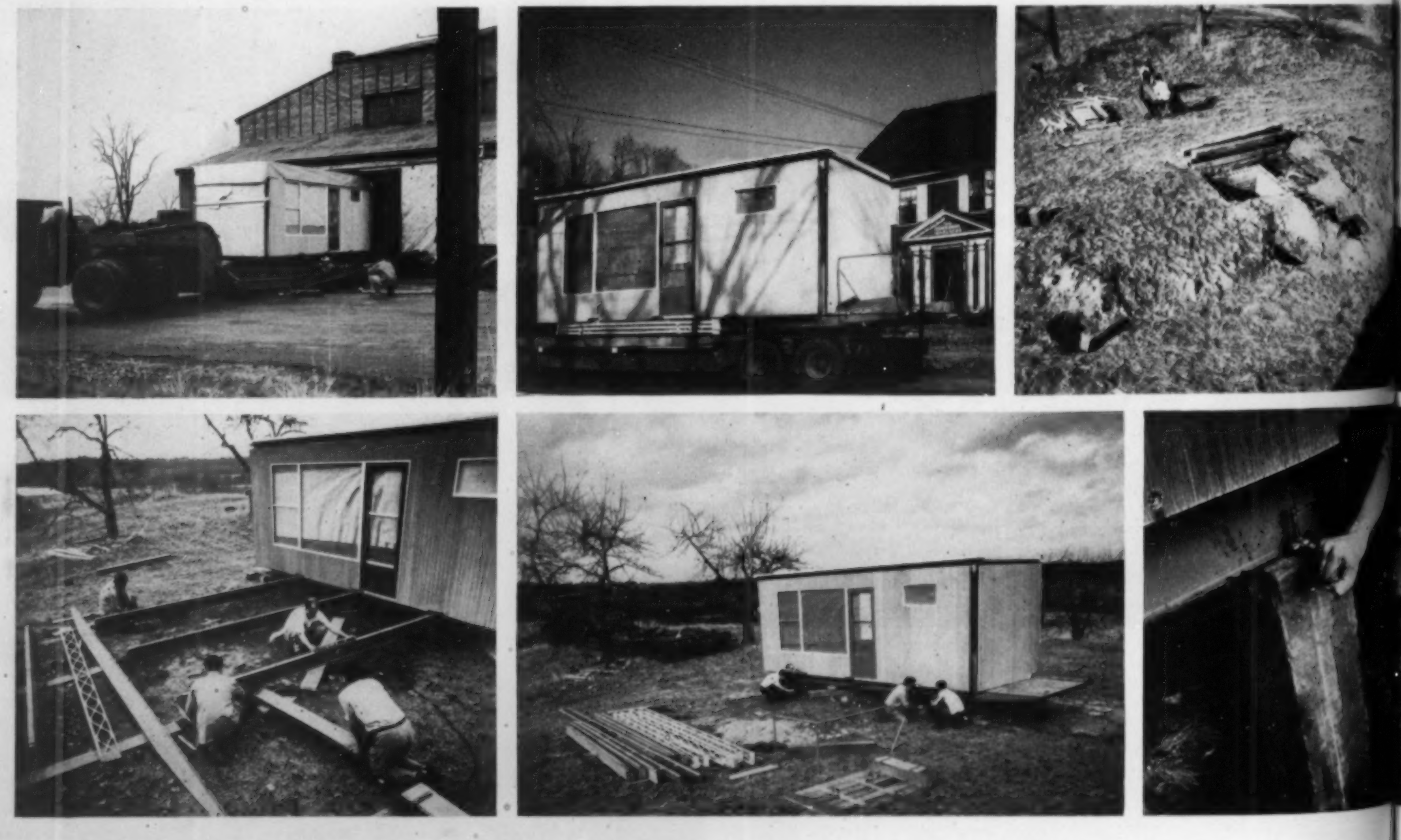
Photos below show transportation to the site, placement, and foundation work. Top row, left to right: complete house package leaving factory on a single trailer; en route; extent of foundation work; arrival at site ready for unloading. State highway clearance requirements are a controlling factor in design. Note minimum foundation work: a few post holes, one small pit, under utility area. Bottom row: leveling steel subframe on temporary blocks preparatory to bolting it together; house, folded, on site with subframe steel alongside; suspending precast foundation piers from steel subframe; pouring grout around piers to form footings. Photos at right: top row, unfolding starts, aided by



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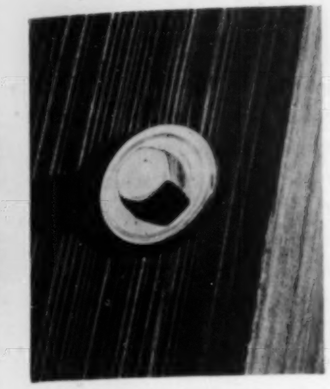

Bolts are retractible so house can be disassembled

Ezra Stoller: Pictor

Carl Koch, architect (left), is president of Acorn Houses, Inc.; John R. Bemis (right), treasurer; Calvin P. Bartlett (not shown), general counsel

, folded,
el along-
founda-
ubframe;
piers to
ight: top
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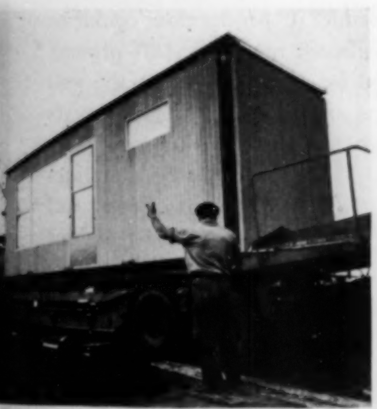
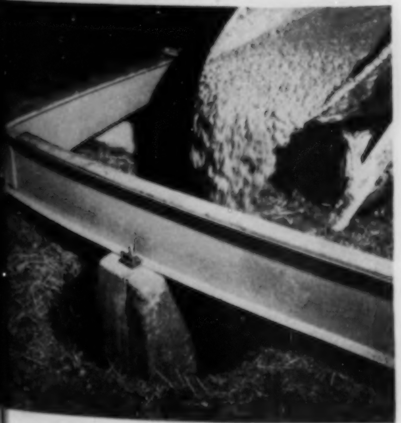
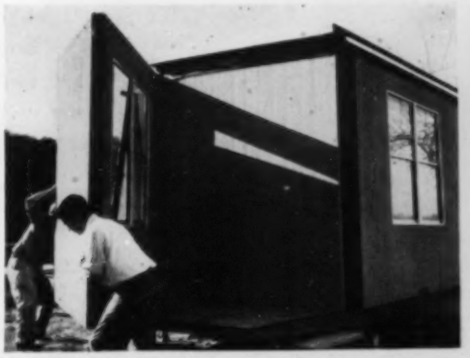
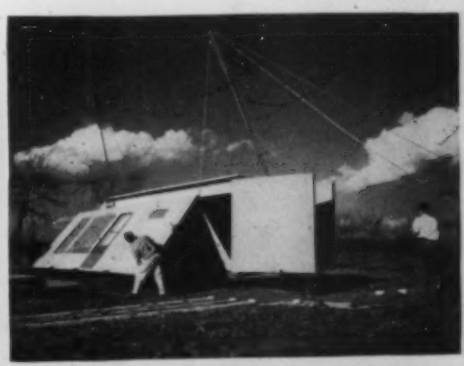
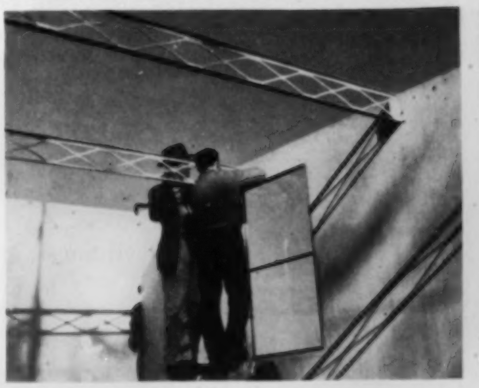
simple boom and one-man winch; center row, placing open-web roof joists and roof panels; bottom row, house nearly erected, roof joints being sealed. Total man hours: for erection, 32; for site preparation, 20

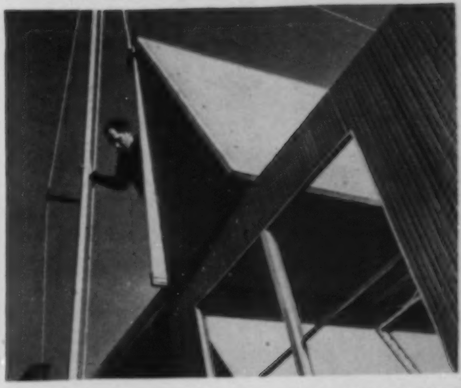


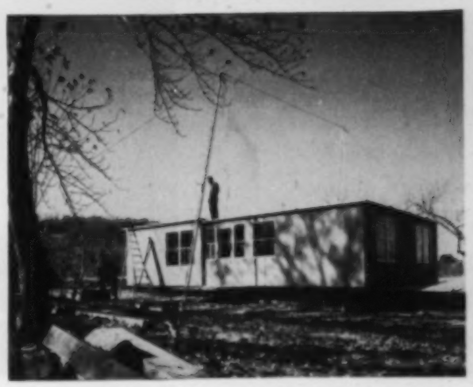


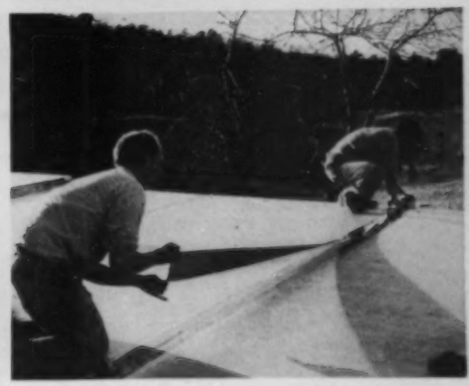


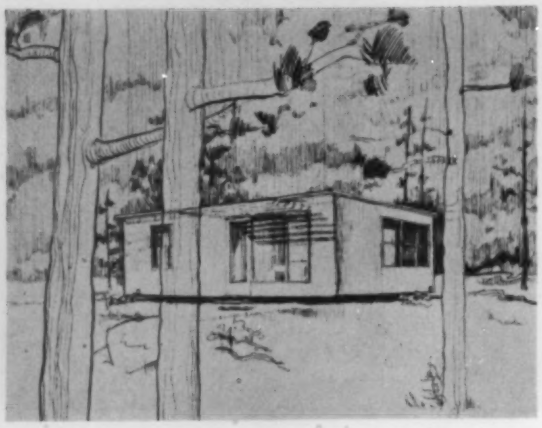


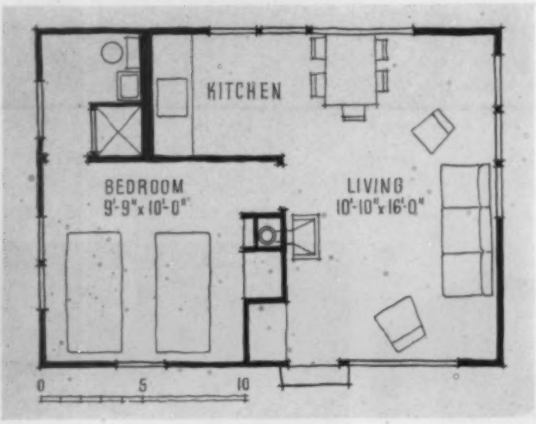


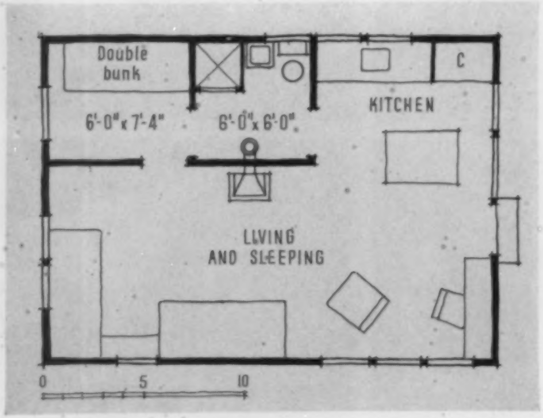










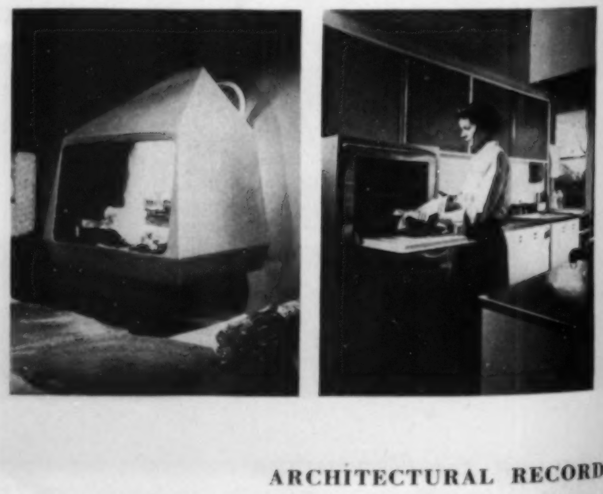


including Acorn, can count on little governmental help. FHA and HHFA have their hands full with day-to-day problems arising out of conventional house-building practices; their primary interest is getting the bugs out of age-old materials such as brick, licking condensation with conventional materials and material combinations, not fooling around with anything out of the ordinary.

In the seller's market which has existed now for some time, and without the materials shortages which gave new developments such an importance immediately after the war, preoccupation with conventional housing is to be expected. The climate is unhealthy for experimenters, particularly for such an organization as Acorn Houses. The normal channel of operations through FHA is not readily adapted to assist them through the development phase. No funds or facilities are available for careful analysis, testing and evaluating of new materials, nor will a mortgage-insuring agency readily accept new techniques without such tests. An untested product requires such high sales expense that it takes itself right out of the market. So it is virtually impossible, without extensive financial backing, for private enterprise to contribute appreciably toward development of improved housing techniques and materials. Acorn Houses is tackling this problem directly. Its panels are a honeycomb sandwich — corrugated resin-impregnated paper core faced with plywood both sides, phenol glued — which has been tested neither in production nor in use except in the one prototype house and by Forest Products Laboratory in their test house constructed three years ago. Forest Products tests, both field and laboratory, are as extensive as any new material usually receives. Acorn Houses had a builder ready to sign a firm order if production could be assured; a manufacturer almost ready to start production if a firm order could be obtained — but the gulf between the two remains uncrossed. So, gritting its teeth, Acorn Houses has gotten orders for the small cottage version shown at the left, has purchased manufacturing space, has designed and built a bag press, and by early summer will have 15 or 20 16- by 24-ft cabins built. These should prove or disprove the system's soundness. As far as one can predict, its prospects, though tough, look good for the long run.

Above, rendering and two plans showing variations possible with the Acorn Cottage, small version of The Acorn House, now in production. Shell of the house, on foundations, sells for under $2000 FOB plant; partitions, plumbing, etc. are extra. Panel manufacturing problems have deterred producers of such products as conventional plywood from undertaking their manufacture. Photos at right show porcelain-enameled prefab fireplace, waist-high electric oven, in kitchen of large Acorn House. These may be bought as extras for the Cottage

Stoller Pictor



SITES MOVED TO OFFICE BY AIR PHOTOS

By Walter L. Weitner

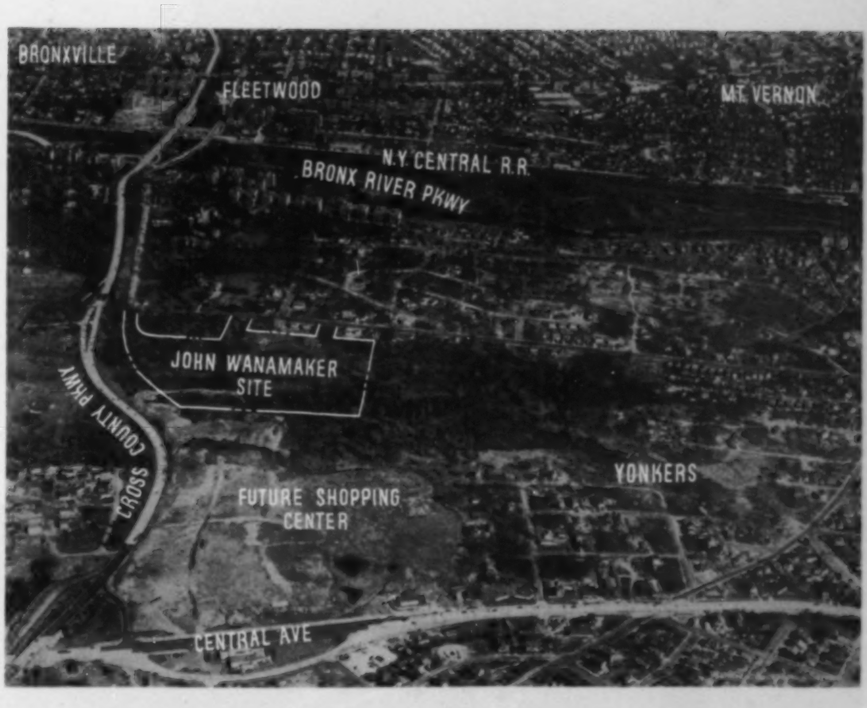
THERE'S a new twist to the old expression, "Bringing the mountain to Mahomet." Through new applications of aerial photography, this saying could just as well read, "Bringing the site to the architect." Site study, selection and planning can be done right in the office with aerial photos. They can permit effective, comfortable work, while saving many trips to the site and increasing the architect's practical radius of operation and volume of work.

There are two phases — *simple aerial photography* which consists of ordinary oblique and vertical views, of great use in site selection, preliminary study, demonstration to interested parties, positioning of buildings with reference to existing terrain features, etc.; and *photogrammetry*, the process of obtaining accurate ground measurements and topographical surveys from controlled aerial photographs.

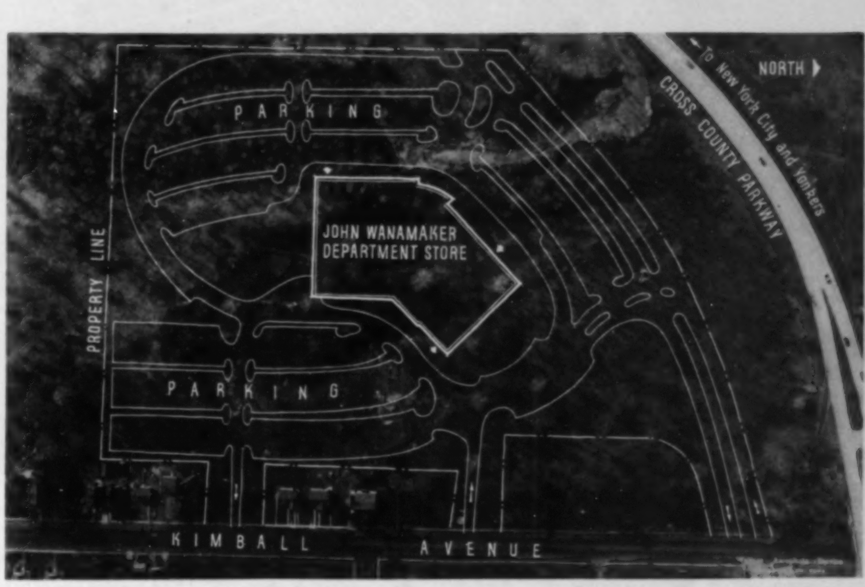
Use of Aerial Photos

Simple aerial photographs show fine details of a site and its immediate surroundings, such as trees, foliage, stone walls, lakes, swamps, existing buildings, roads, drives or paths, and other terrain features which are of vital importance in planning ingress and egress drives, parking areas, and determining positions of buildings, their design and construction.

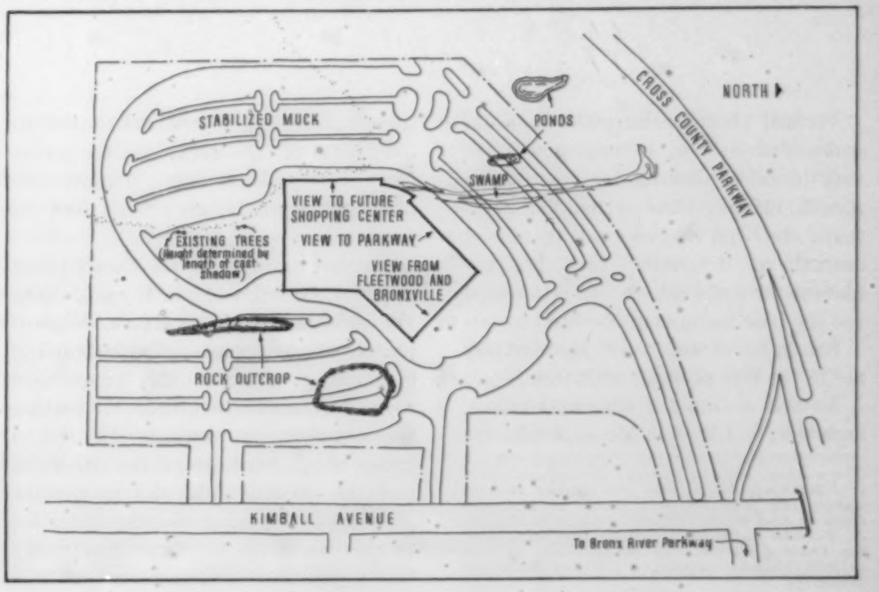
Such photos show conditions just as they are, not as information from outdated surveys or word of mouth information would have you believe. Thus



BRONXVILLE
FLEETWOOD
MT. VERNON
N.Y. CENTRAL R.R.
BRONX RIVER PKWY
JOHN WANAMAKER SITE
CROSS COUNTY PKWY
YONKERS
FUTURE SHOPPING CENTER
CENTRAL AVE



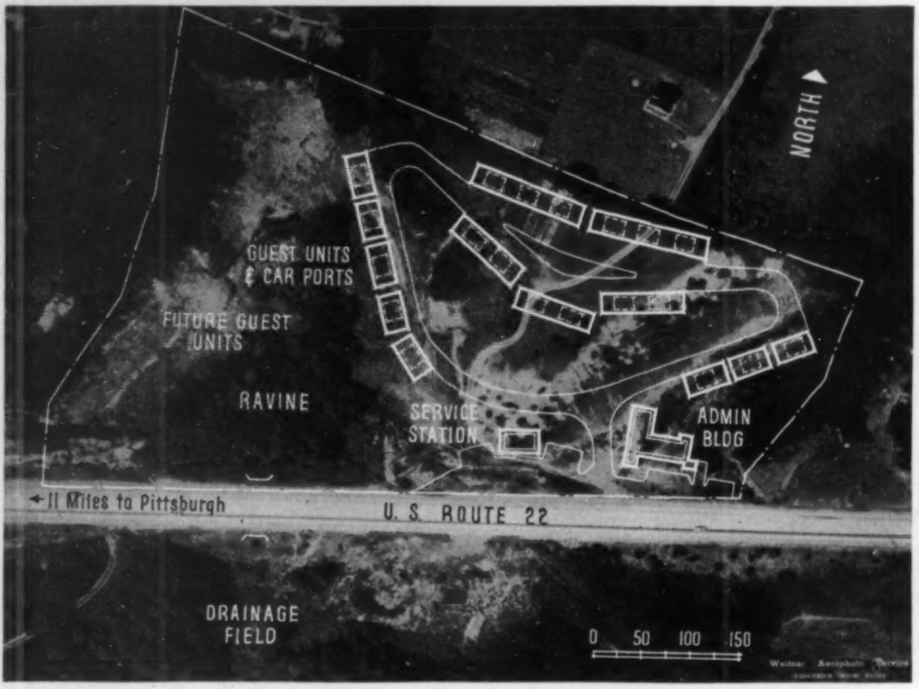
NORTH
To New York City and Yonkers
CROSS COUNTY PARKWAY
PARKING
JOHN WANAMAKER DEPARTMENT STORE
PROPERTY LINE
PARKING
KIMBALL AVENUE



CROSS COUNTY PARKWAY
NORTH
STABILIZED MUCK
PONDS
SWAMP
VIEW TO FUTURE SHOPPING CENTER
VIEW TO PARKWAY
EXISTING TREES (height determined by length of cast shadow)
VIEW FROM FLEETWOOD AND BRONXVILLE
ROCK OUTCROP
KIMBALL AVENUE
To Bronx River Parkway

By studying aerial photos, the architect can do his preliminary planning and start designing before visiting the site. As in the case of this site for a department store close to New York City, the building can be located to present the best view from the main roads. Other information learned is indicated on the drawing preliminary work estimates can be much more accurate than other methods allow.

Few laymen understand plans or blueprints very thoroughly. When a drawing of a proposed building or project is done on the actual site (on a photograph) in its authentic surroundings, however, it is very realistic. Misunderstandings and misapprehensions about the project can be eliminated at the start in this way.



PROPERTY LINES
POND
DRAINAGE
HOUSE

This is the site for a group of motor courts to be built near Pittsburgh. With aerial photos, the architects were able to lay out the buildings and roads so as to take advantage of the flat areas available, minimizing cutting and filling. The ad-

Vertical photos enlarged to working scales, such as 1 in. to 40 or 100 ft are very useful in determining tree foliage spread, existing road or building positions, etc., and overlays can be moved around to determine best building placement, drainage, etc. to retain and use the best features of the site.

Examples of this type photography are in the files of many architects.

As one example, Malcolm Duncan, architect, and W. Lee Moore, landscape architect, of Scarsdale, N. Y. were asked by Tourinns, Inc. of New York City to design several modern motor courts at Allentown and Pittsburgh, Pa. and Fort Wayne, Ind., as the first of a trans-continental chain.

Our firm was engaged to do a group of oblique and vertical views of these sites, which was accomplished within 10 days, and study and planning of the sites were done from those photographs with 40 scale enlargements. Much time, travel and money were saved in the course of this work, and the architects were able to have designs and planning begun before setting foot on the sites.

Another example is that of a shopping center at Great Neck, L. I. by Lathrop Douglass and W. Lee Moore. A prospective client was interested in building a shopping center in this progressive town, but needed assurance of renting space before proceeding. We did a group of photographs of the site itself and the general area, the former for preliminary planning and the latter for market research, to show graphically the population concentration to bear out approximated 1950 census figures of people living within 10 miles of this site.

The architects superimposed a perspective drawing on an oblique view of the property, and a plot plan on a vertical view. Using these photographs for demonstration purposes, the architects assured store executives of the value in locating branches in this development. Planning of the project is now well under way and is enlarged considerably over the original version.

Photogrammetry

Topographical surveys are generally required in any type of land development. Here, precisely controlled aerial photographs from which accurate horizontal, elevation and declination measurements can be made — photogrammetry — come to the fore. Photogrammetry, a word which is rapidly gaining wide usage in map making and contour or topographical surveying, is the process of surveying group areas accurately from aerial photographs, employing the principle of stereoscopy (seeing the same subject from adjacent photographic viewpoints). Measurements to as small as 1-ft contour intervals can now be

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The author, head of Weitner Aerophoto Service, Yonkers, N. Y., and the editors wish to thank the architectural firms of Malcolm Duncan and W. Lee Moore, both of Scarsdale, N. Y., and Lathrop Douglass, New York City, for their assistance in preparation of this article. Thanks are due to J. Leroy Reilly for drawings.

made using precision optical and mechanical instruments.

You may recall the vivid and realistic effects gained by seeing photos through a stereoscope, giving depth to otherwise flat pictures. The same principle is used in photogrammetry. Successive photos (stereo pairs) are taken from an airplane using precision aerial cameras, each successive photograph overlapping the former by 50–60 per cent. Then, using several known points of elevation and horizontal positions established in the area, all other points and contours of the subject area can be obtained with accuracy similar to — and in many cases exceeding — that of ground surveys.

The advantages of aerial surveys are numerous. They are quicker, and generally more economical and accurate than can be done otherwise. It is no longer necessary to have a ground party in the field over a length of time in good or bad weather and poor terrain, since several points on or near the property or area can be established quickly by two men.

Once these points are available, plotting machines trace out contours from the photos at approximately several acres per hour. These contours (usually at a scale of 1 in. to 100 ft and in increments of 5 ft) are actual and not interpolations of a grid as done in ground methods, since every foot of ground is seen on the photos through the machines. Hence, more accuracy.

Where heavy wooded areas are encountered, or steep grades, swampland, etc., the human error of a ground party operating under uncomfortable or hazardous conditions is usually greater than photogrammetric methods might produce under the same circumstances, as a result of the ground being partly obscured by such heavy growth. Heavily wooded areas should be photographed with foliage at a minimum, of course.

This type survey is usually practical from 20 acres upward. Below this size the cost of a minimum amount of required flying, lab work and engineering (contour plotting) and drafting usually exceeds that of ground methods. From this size upward, however, the savings will increase proportionately.

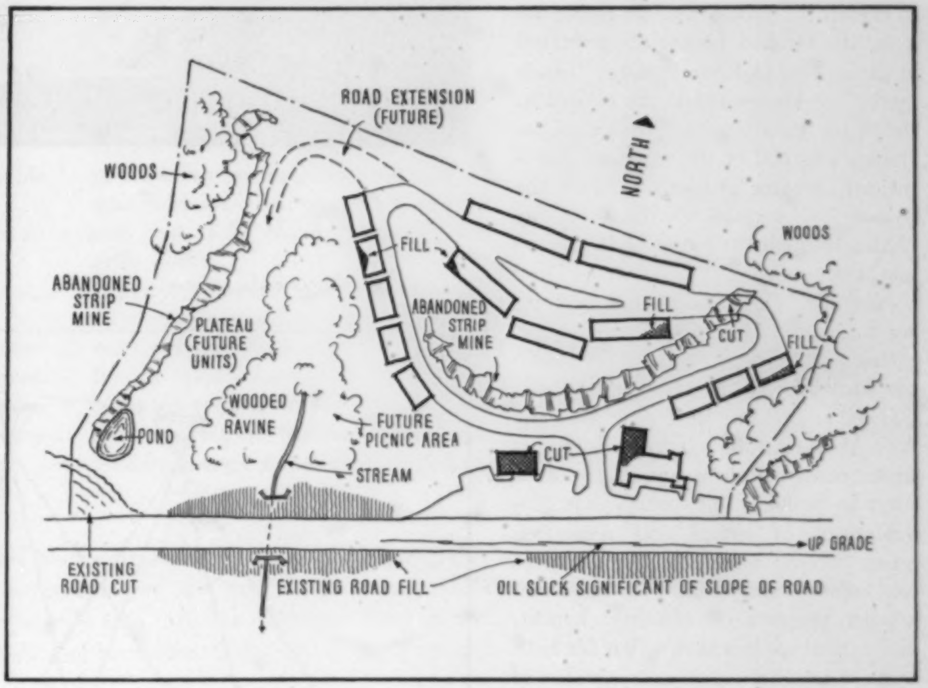
The survey of a 200-acre plot, for example, requiring 5-ft contour intervals at 1 in. to 100 ft scale might cost $30 to $40 per acre by ground methods, and take a month for delivery, while the aerial survey of this same area would probably cost $15 to $20 per acre, and be delivered in a week to 10 days. Prices vary, of course, with specification requirements, terrain, size and location of a site.

In conjunction with such a survey, a photo-mosaic can be produced as a by-product of the photographs used at reasonable extra cost. This is actually the flat mounting of the most central portion of each photograph. Cross reference may then be made between the tracing of the contour survey when completed, and the actual ground areas as shown in the mosaic.

What would be the procedure if, for example, you required a contour survey of a 450-acre property for a housing development or subdivision? The first thing needed would be a detailed map of the area. Let us say the total cost is set at $4500 or $10 per acre, which is normal. What steps are then taken?

Several men are sent out to establish

Y LINES
HOUSE
GARAGE



ministration building and service station were located for convenient access from the highway. The oil slick on the highway came from cars pulling up grade. Photos like these illustrate sites to planners who otherwise could refer only to the surveys points on the property as to horizontal and vertical locations. Six or eight points are sufficient in this area. The photographic crew takes a group of successive pictures, using a Cartographic camera providing 9 by 9 in. negatives. Great care is taken to keep the camera level at the instants the photographs are taken. If this property is, say, about 4500 ft in length, the plane must be flown so that 1 in. on the negative covers 500 ft on the ground. Then we must plan 60 per cent overlap of each picture. Five or six exposures will nicely cover this area, for our purposes, but several such strips are flown while the crew is in the air for precaution. To make the map, the finished photos are mounted in the contour plotting machine, "bench marks" or known points are located in the pictures and set into position at the tracing arm end of the machine, and a trained operator proceeds to trace the contours as he follows them on the photos through the lenses of the stereo machine.

National, state, and local governments are regular users of photogrammetric surveys and maps, in for example such projects as the Pennsylvania Turnpike, the Big Inch pipe line, the New York to Buffalo Throughway now under construction and in many other ways in geology, soil conservation, development of camps and recreation areas, arterial planning. The architect and engineer concerned with these and smaller projects can likewise benefit, and experience has shown that for both large or small developments, the use of aerial photographs and photogrammetry is of great service.

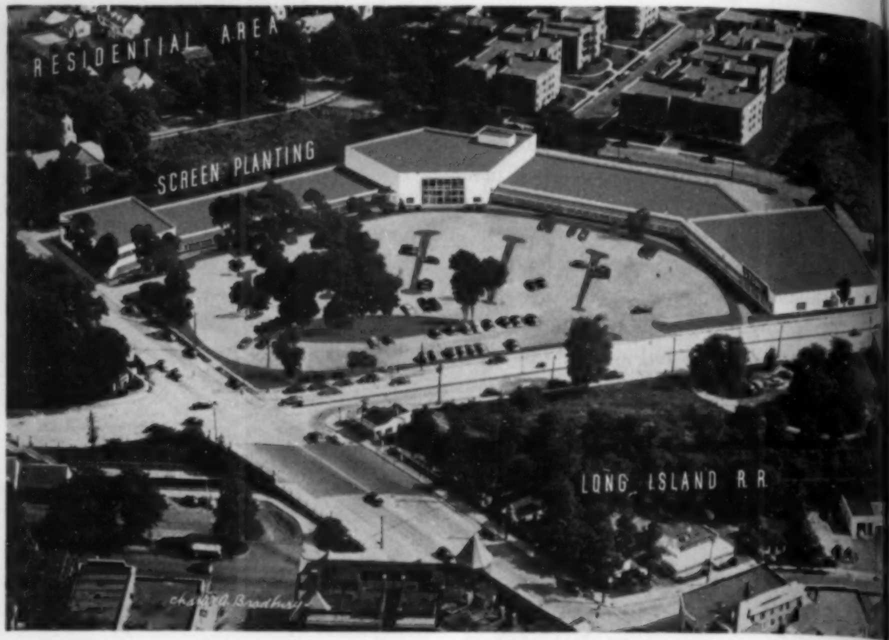
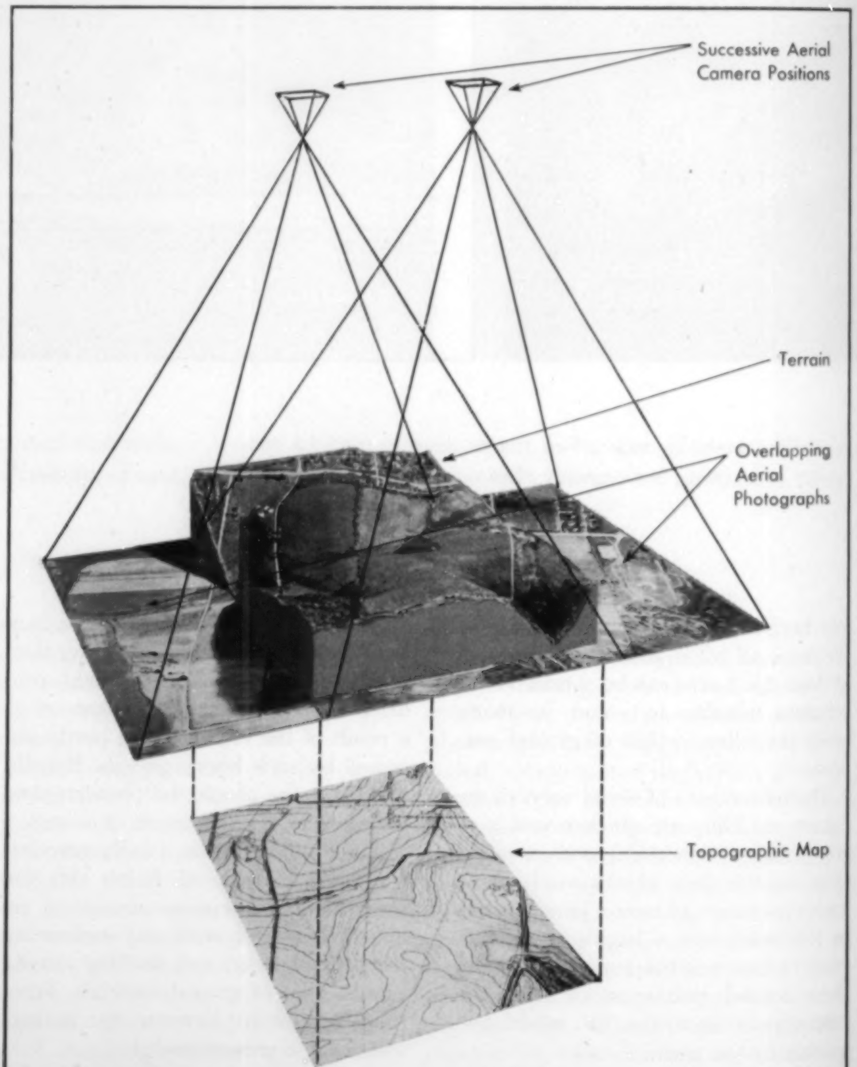


Photo Courtesy Lockwood, Kessler & Bartlett


Successive Aerial Camera Positions
Terrain
Overlapping Aerial Photographs
Topographic Map

Top: the architect can superimpose a perspective drawing on an oblique air photo to show the client very realistically how the project will look when finished. The drawing on this photo (bounded by the cross roads and the apartments in the background) is of a proposed shopping center for Great Neck, L. I. Bottom: how contour maps are made with air views. Successive photos are taken with precision aerial cameras, each photo overlapping the other by 50–60 per cent. With several elevations known, an operator places these photos in a machine which employs the stereoscope principle, and he uses it to trace out a contour map

HOUSE PANEL-CONVECTION HEATING SYSTEMS

. . . that stress comfort, economy, simplicity

By Zay Smith, Architect and Engineer *

A YARDSTICK for evaluating any house heating system logically would include such questions as:

1. Does it provide adequate heat?
2. Does it respond quickly to weather changes?
3. Is the heat even?
4. Are floors and outside walls warm?
5. Are there drafts resulting from the system?
6. Does it provide clean warm air, of desirable humidity, in winter and can it supply cool air in summer?
7. Do controls provide for a flexible system?
8. Is the system easy for the owner to operate?
9. Is it economical to install, operate and maintain?

It was inevitable that we, as other offices throughout the country must have done, should attempt to combine the good points of radiant panel heating and convection heating into one system that would rank high when measured by the yardstick of the ideal.

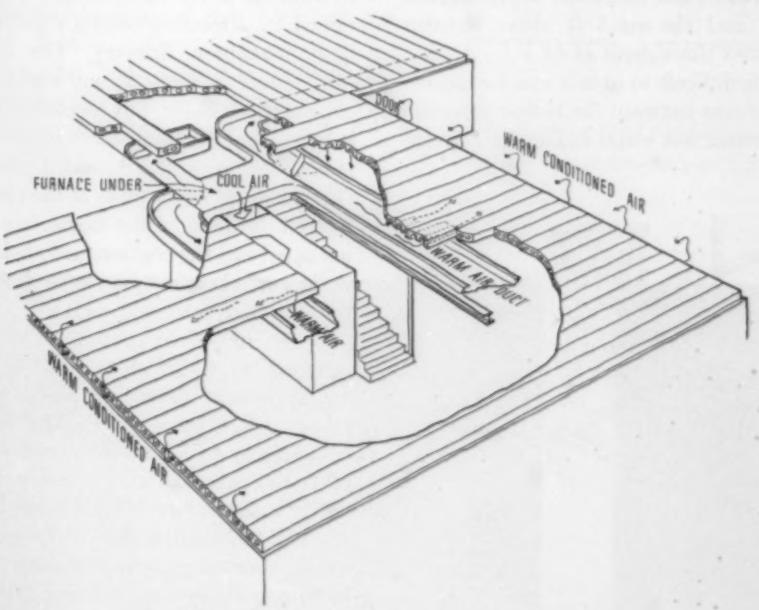
Combined Systems Designed

The performance of our first installation which employs precast hollow core concrete slabs has been very encouraging. We also have designed such systems using ordinary hollow tile and, for a low cost small residence, a ductless system using the frame floor as the top of an extended plenum chamber. The latter promises to be interesting because all duct work has been eliminated and the only cost is for the furnace itself and grille work.

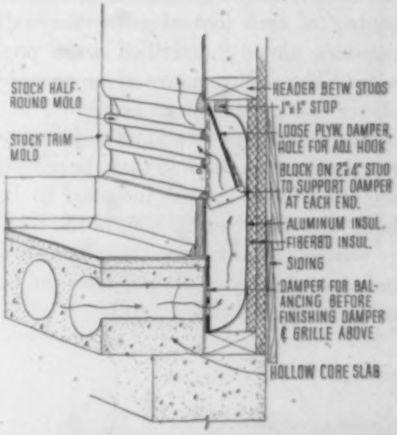
The only application far enough along to warrant performance tests is the one using precast hollow core concrete slabs for the floor construction. It is a one-story five room residence with full basement, nearing completion in Palos Park, Illinois. Except for the concrete basement and hollow core slab first floor construction, the structure is of 2 by 4 in. stud framing with redwood siding and shed roof. Walls and ceiling are well insulated, and double glazed or storm windows are specified throughout.

The furnace, of conventional design with blower, filter and humidifier, is located in the basement near the middle of the house. Ducts of large area carry the conditioned air to the under side of the inside ends of the hollow-core slabs. Holes in the bottom of each core directly over the open topped duct permit the air to enter the slabs (there are two cores to each 12 by 6 in. slab). The air passes through the entire length before it enters the room through a continuous grille fitted with dampers between each two studs. Both dampers and grille were made on the job by the carpenter.

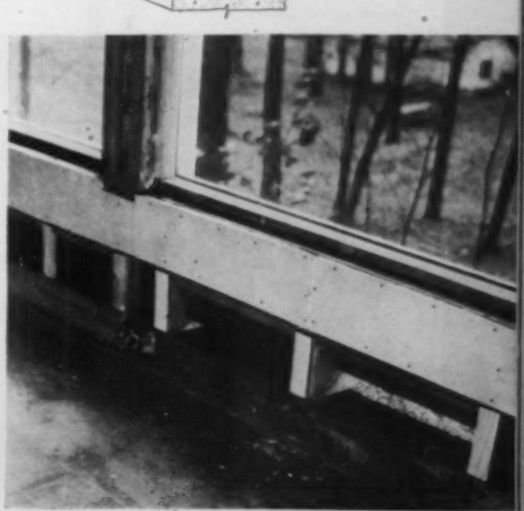
The dampers are of Masonite hardboard and require no hinges or hardware except perhaps a small screw-eye or hole


FURNACE UNDER
COOL AIR
DOOR
WARM CONDITIONED AIR
WARM AIR DUCT
WARM AIR
WARM CONDITIONED AIR

Above: warm air enters under sides of hollow core slabs from open topped ducts, heats up the slabs, and then passes into the room. Slabs near doorways and other obstructions have closed ends; may be opened on bottom to heat basement


STOCK HALF-ROUND MOLD
STOCK TRIM MOLD
HEADER BETW STUDS
1"x1" STOP
LOOSE PLYW. DAMPER, HOLE FOR ADJ. HOOK
BLOCK ON 2"x4" STUD TO SUPPORT DAMPER AT EACH END.
ALUMINUM INSUL.
FIBERB'D INSUL.
SIDING
DAMPER FOR BALANCING BEFORE FINISHING DAMPER & GRILLE ABOVE
HOLLOW CORE SLAB

Right: simple grille arrangement for hollow core slab system. Ordinary half rounds and trim mold nailed directly to the studs form the grille work; adjustable dampers between studs can be plywood or hardboard. Grille runs length of the room



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* *Zay Smith Associates, Chicago, Ill.*

at the base into which a wire hook may be inserted for closing. The grille is 6 in. high and runs the entire length of the room immediately above the baseboard. It is formed by nailing half rounds directly to the studs and framing the whole with trim mould. Each damper operates independently and when open forms a baffle to deflect the air into the room. When closed it prevents the replacement of warm air in the slab and thus reduces the temperature of the floor in that one slab. Due to lag and conduction from the adjacent warm slab the unheated slabs do not show an unpleasant difference in temperature; however, an appreciable difference (about 4 F) was noticed during tests which indicated the control possible.

The system was designed to maintain normal temperature in the living area, warmer than normal temperature for the bathroom floor, and slightly cooler than normal temperatures in the sleeping areas. In order to provide this three sets of controls were designed.

To balance the zones, dampers were provided in the main ducts; to balance each section of the room (it was feared that short circuiting of air might overheat one section and starve another section) partial stoppers were designed for the ends of the cores; and for individual control of each foot of grille, the wall registers already described were provided. The wall registers alone provide all the control the owner needs.

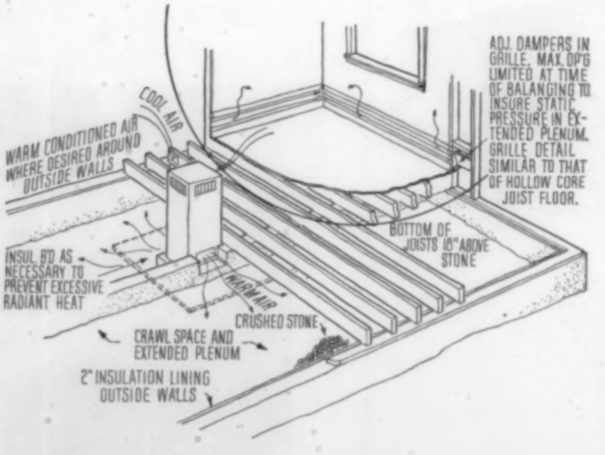
The performance tests on this job were so near what was desired that the second set of controls — those intended to be built into the job at the ends of the cores — seemed unnecessary. Any possible unbalance that may develop later can be corrected by existing controls.

Heating Tests

One of our tests was conducted with an outside temperature of 18 F, with constant air circulation, and with some of the storm windows and room registers in place. Except for the bathroom, where a warmer than normal floor was desired, the maximum difference in temperature was only 4 F, and this occurred in one room on the north side of the house. The floor of the bath was 82 F while air at 5 ft was 72 F. For all practical purposes the temperature can be said to have been 73 F (the thermostat setting) throughout the first floor rooms, except the bedroom wing which was the desired 68 F.

For the desired number of air changes per hour the large grille area made possible a very low velocity at the register. Smoke tests showed that the air "oozed" out the registers and moved up the outside walls about 4 ft before moving into and filling the room, after which it found its way to the large return air grille designed as part of the end of the mantel in the entry hall directly above the furnace. Air is also permitted to return to the furnace down the basement stairs and through the basement. This air plus heat from the surface of the hollow core slab ceiling provides the only heat for the basement at present. However, certain cores unable to empty their air into the room above because of doorways and other necessary obstructions will be opened to the basement to permit the slab to pass warmed air to the basement. At present the basement floors register 63 F and the air 5 ft above remains constant throughout at 69 F.

It is difficult to obtain exact comparison of cost between the hollow core slab and either hot water radiant or conventional convection because of the many factors which only can be evaluated rather than measured exactly. The table below, however, gives a fair idea of our cost.


COOL AIR
WARM CONDITIONED AIR WHERE DESIRED AROUND OUTSIDE WALLS
ADJ. DAMPERS IN GRILLE, MAX. OP'G LIMITED AT TIME OF BALANCING TO INSURE STATIC PRESSURE IN EXTENDED PLENUM. GRILLE DETAIL SIMILAR TO THAT OF HOLLOW CORE JOIST FLOOR.
BOTTOM OF JOISTS 18" ABOVE STONE
INSUL. B'D AS NECESSARY TO PREVENT EXCESSIVE RADIANT HEAT
WARM AIR
CRUSHED STONE
CRAWL SPACE AND EXTENDED PLENUM
2" INSULATION LINING OUTSIDE WALLS

Warm air from the bottom of the furnace fills the crawl space and heats the floor in this ductless system. Grilles with adjustable dampers around outside walls admit air to the room

***Construction Cost* (December 1949)**

Estimated costs for the hollow core slab system are:	
1. Furnace and Controls	**$450.00**
2. Metal Ductwork	**300.00**
3. Continuous dampered grilles:	
Insulation, fiber & foil	**15.00**
Moulding & trim, Plywood	**12.00**
Labor, carpenter	**60.00**
	$837.00

The cost of the floor construction (98 cents per sq ft) is not included above because it would have been used regardless of the type of heating.

Other Combined Systems

As mentioned before, we also have designed a ductless system, as well as one using hollow core tile.

In the ductless system, the furnace delivers warm conditioned air from the bottom and supplies it directly into a sealed crawl space under the entire floor which becomes in effect the top of a huge plenum chamber. The conditioned air is admitted into the room through registers on the outside wall after it has passed under the floor and up between the wall studs to headers above the register tops. Static pressure, necessary to force air to the farthest outlet, is obtained by presetting certain registers to limit maximum delivery. The owner may reduce delivery at any register by closing the register, but he cannot open it more than the limit set to insure constant pressure in the extended plenum. Obviously the outer walls of the plenum as well as those of the house, are well insulated and the continuous foundation walls run below frost line so that practically all heat reaches the interior.

In the hollow tile application the conditioned air is forced through a large supply trench running the length of the basementless single floor. The hollow tiles supported by a concrete slab, run off from the trench at a 45 degree angle in line with the flow of air. Finished floor tile with integral hollow cores may be used, thus eliminating further floor covering. In our application ordinary hollow wall tile was used and covered with a finish floor tile. Dampered registers formed of glazed wall tile and flat sheet metal were spaced continuously around the outer walls on 12 in. centers.

LOCKER ROOM CONCENTRATES ON EFFICIENCY

Rust Engineering Co., Pittsburgh, Pa.

HERE is a locker room, ideal for use in industrial, commercial and institutional buildings, that is highly efficient in both use of space and materials. Concentration of all sanitary facilities in a central mechanical core makes this possible.

The sanitary core consists of a 3-ft wide, double-partitioned, plumbing access well which houses the pipes, drains, valves, fixture hangers, etc. Attached to the walls of this core are all of the sanitary fixtures — the lavatories, urinals, water closets and showers.

These units are divided into four sections so that each quarter of the locker room has access to all types of fixtures. It reduces circulation to a minimum — there is no cross flow.

In addition to distributing the fixtures evenly, this scheme is notably economical, since all plumbing work is grouped so that a single vent and drain have the maximum fixtures hooked to them. Moreover, all odors and vapors are concentrated so that, through louvers spaced properly on the walls, and with the partitioned core acting as a plenum, the fixture area can be exhausted adequately with a single fan. Since this core contains all fixtures with water or vapor conditions, it is recommended that this wall be made of glazed tile for ease in cleaning. There is almost no other exposed wall since the lockers themselves cover much of this area.

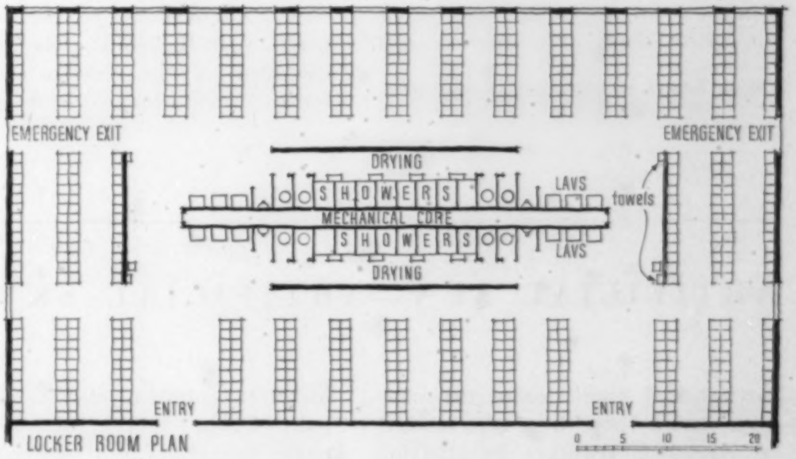
All fixtures are wall hung, and the toilet partitions are hung from the ceiling, so that the floor is kept unobstructed for sanitation. Waste disposal units are designed to be totally recessed in the wall with removable sections for emptying.

At the ends of locker corridors, from base to ceiling and for the full width of the aisle, glass block is suggested for cleanliness and cheerful atmosphere.

The plastered ceiling is furred down to the heads of lockers and finished flush with their face. A blower fan forces air into the locker room through ceiling outlets and exhausts the air out through each locker. The air movement into the locker is through slots at the bottom and out through ducts individually connected to the top of each locker. Air is tempered through heating coils in winter. Drying action is definitely noticed on clothes properly hung in the locker.

Radiant heating pipe coils are located in the floor. The floor has a separate top finish of either cement, terrazzo or quarry tile. Generally 5 by 12 in. face color, ceramic-glazed wall tiles are used. All lighting fixtures are recessed into the plaster ceiling.

This locker room plan has been used in several Rust Co. designs during the past three years, including a plant for the Container Corporation of America.



Use of centralized mechanical core in locker room cuts circulation to a minimum. Photos: locker building of Container Corporation of America, Fernandina, Fla.

Torkel Korling Photos

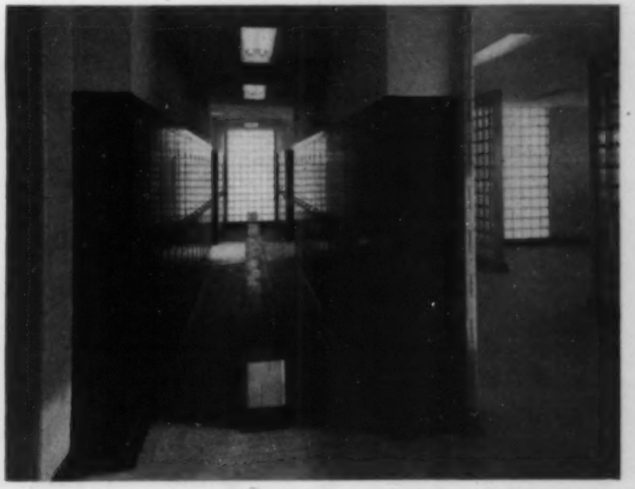


Photo of the band room, Shasta Union High School, Redding, Calif., and plan of music department for Harper Elementary School, Evansville, Ind., are from Music Rooms and Equipment. Architects are, respectively, Charles F. Dean and Ralph Legeman

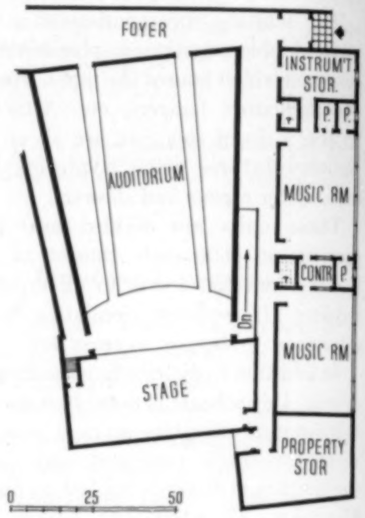
A guide to planning

SCHOOL MUSIC ROOMS

"PLANNING the physical plant for music has perplexed many an administrator, architect, and supervisor of music . . . However, experience and scientific investigations at the present time are producing some helpful information and principles about the kind of rooms and equipment which will facilitate the progress of musical study and performance in our schools."

This introduction to *Music Rooms and Equipment*,* a new bulletin (No. 17) of the Music Education Research Council indicates the type of material to be found in this publication.

Compiled by Dr. Clarence J. Best, Head Music Education Dept., Texas Christian University, the report covers: location, size and types of music rooms; storage facilities; acoustics; lighting; heating and ventilating; auditorium stage; band shells. Descriptive and specification type material is included along with plans, illustrations and a bibliography. The acoustics section was prepared by Dr. Richard H. Bolt of M.I.T., co-author of the RECORD's current series, "Architectural Acoustics."



** Music Educators National Conference, 64 E. Jackson Blvd., Chicago 4, Ill. $1.50.*

ARTIFICIAL SUN—ARTIFICIAL SKY

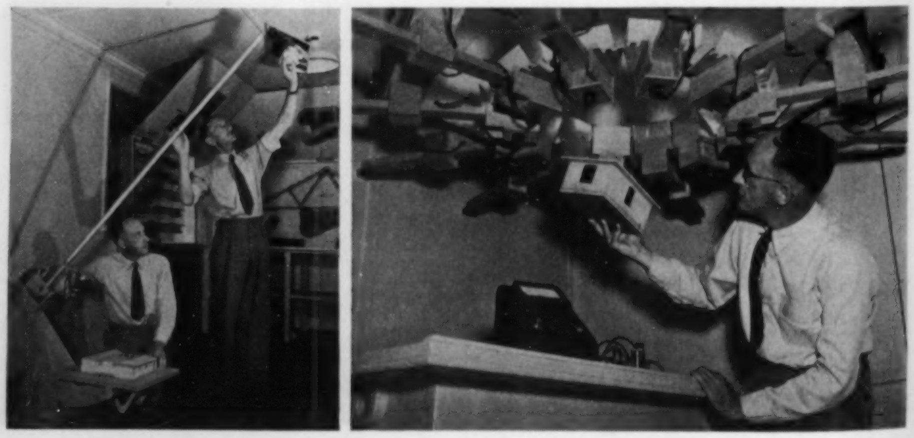
AN artificial "sun" (called the *solarscope*) and a "sky" have been devised by Australian scientists for studying sunshine and daylight in relation to building problems.

The solarscope demonstrates the fall of sunshine on buildings in different latitudes for different seasons and times of day. In contrast to other such devices, reflected light ("sun") projects onto the model from a mirror at one end of an arm on the solarscope. A spotlight is at the other end.

The model building remains immobile on a platform which neither rotates nor tilts; instead the arm revolves about the platform simulating movement of the sun.

The artificial sky permits the study of daylighting conditions within a model under a constant light source. Ultimately this apparatus may be used to determine sufficient data for the calculation of reflected light values, as now can be done with direct daylight.

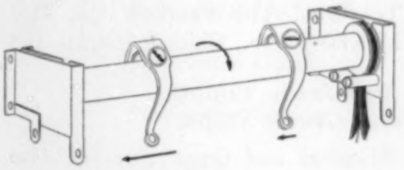
Australian Official Photograph



Scientists of the Commonwealth Experimental Building Station, Sydney, Australia, demonstrate artificial "sun" (left) and "sky" (right). When full-scale "sky" is built, models will be placed in center of inverted bowl, 24 ft across. Continuous fluorescent tube will replace the adjustable lights used for development

PRODUCTS for Better Building

Motor or hand operated drapery traverse uses no cords, turns corners or curves. Below: clockwise rotation of rod moves drapery carriers to left; counter-clockwise, to right. Varying the pitch of the ball roller shafts determines speed and direction of carriers. For divided curtains, opposite pitches are used



Cordless Drapery Traverse

The *Bradley Beauty-Fold* rotary drapery traverse uses an interesting device to distribute drapery in equal folds during all stages of traversing. It also permits synchronized movement of unequal width panels over unequal distances as is often found in corner window installations. The system employs a rotating tube, cut to size and hung like a roller shade in a choice of mounting brackets. Carriers, equipped with ball type rollers, hook over this tube. Movement of the carriers is produced by rotating the tube manually or by motor, and is the result of angular settings of the shafts in the ball type rollers. The relative speed and direction of each carrier is established by calculated variations of this angular setting. The system may be used in either large or small installations. A special spring coupling is available which allows traversing around curves of any radius. The Bradley Rotor Traverse Co., Inc., 92 Jewett Ave., Staten Island 2, N. Y.

Joist Bridging

An extremely simple installation that requires no tools is featured by the *Snap-In Bridge*. The unit consists of two metal channels, one of which telescopes into the other and locks into holes located for either 16-, 12- or 8-in. center joists. When first joined, the two units form an angle. Ends of the bridge are pointed, and are engaged on one joist about ½ in. below the sub-floor, and on the adjacent joist near the bottom. Pressure is then applied upward at point of fulcrum until the bridge snaps into place in a straight line. This last action drives the end points into the joists and locks the bridge in place. The unit is made of 20-gage steel, treated with a rust-proofing material. It is manufactured by the Snap-In Bridge Co., Whitehall, Mich. National Sales Representative is the Welco Co., 952 Addison St., Chicago, Ill.

Aluminum Window

The *Lupton Master Aluminum Window* is a new projected type window designed especially for schools, hospitals and office buildings. The Unit features extra deep sections, welded construction and precision weathering. The windows can be glazed inside or outside, depending upon individual requirements, and will accommodate glass up to ½ in. thick. All hardware is made of aluminum. Aluminum screens are also available. Michael Flynn Manufacturing Co., 700 E. Godfrey Ave., Philadelphia 20, Pa.

Lightweight Steel Cantilevers

A novel use of lightweight structural steel is employed in the roof overhangs of the Horace Mann School in Austin, Ohio. Architect Arthur F. Sidells devised a roof framing system of 12-in. *J&L Junior Beams* 30 ft long, spaced 4 ft o.c., which are notched over lintel beams and cantilevered 3 ft beyond outside walls to provide a permanent sun shield over classroom window walls. The lightweight members were installed with a ginpole and hang rigging. Connections are field bolted and the steel roof deck is welded to the beams. Use of such a system is claimed to permit relatively wide roof overhangs that are firesafe. Jones & Laughlin Steel Corp., 3rd Ave., & Ross, Pittsburgh 30, Pa.

(*Continued on page 220*)

Notched lightweight steel beams simplify cantilevered roof-overhang construction

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Package Programs For A.I.A. and Producers' Council Meetings

A series of panel meetings on building construction problems have been prepared by the Producers' Council, Inc., national organization of building products manufacturers, with the assistance of the Dept. of Research and Education of the A.I.A. The programs are planned for any joint Chapter meeting of the A.I.A. and the Producers' Council, or any A.I.A. Chapter where there is not a Producers' Council. Panels available include: *Modern Rest Room Planning*, presented by the American Radiator & Sanitary Corp., J. A. Zurn Mfg. Co., and Sanymetal Products Co., Inc.; *Modern Methods of Fastening*, by Miracle Adhesives Corp., Stemco Corp., and the Nelson Stud Welding Div. of the Morton Gregory Corp.; and *Indoor Climate Control*, by Minneapolis-Honeywell, Libbey-Owens-Ford, and Owens-Corning Fiberglas. Actual demonstrations and slide films are used to illustrate lectures. Producers' Council, Inc., 815 15th St., N. W., Washington 5, D. C.

MANUFACTURERS' LITERATURE

Powder-Actuated Fastening Tool

Raising the Curtain on the Amazing Drive-It Powder-Actuated Fastening Tool. Folder and inserts describe a lightweight tool for inserting a variety of drivepin fasteners in concrete, masonry or steel. Full size details are given for the drivepins available for different uses and materials. Accessory equipment data and notes on typical jobs employing the tool are included. 9 pp., illus. Tempo Products Co., 1900 Euclid Ave., Cleveland 15, Ohio.

Wall Furnace

The New Domestic 2-Way Wall Furnace. Bulletin describes a furnace designed to be located in an 18-in. wall or partition. Features of the unit are discussed, and suggested installations are shown in sketches. Specifications for the unit are covered, along with data on the automatic pilot. 2 pp., illus. Domestic Manufacturing Co., 201 Westlake Ave. North, Seattle 9, Wash.

Elevator Doors

Security Elevator Doors. Catalog presents freight elevator doors, motor operators, car gates and dumbwaiter doors. Details, drawings and specifications are given for the several models available. Construction and operation features are noted. Detail drawings are also included for correct frame construction to insure proper door installation. 16 pp., illus. Security Fire Door Co., 3100 Lambdin Ave., St. Louis 15, Mo.*

Electric Stairways

The Proved Solution To Modern Business Traffic-Flow Problems — Westinghouse Electric Stairways (Booklet B-4403). Covers features and suggested uses, with illustrations, of the electric stairways. Non-technical sketches, photographs and "under the hood" pictorializations explain the construction and operation of the mechanisms. A special section is devoted to layouts, design details and dimensions for use in the preparation of preliminary architectural plans. 48 pp., illus. Westinghouse Electric Corp., Elevator Div., 150 Pacific Ave., Jersey City, N. J.*

Built-up Roofs and Flashings

Ruberoid Bonded Built-Up Roofs and Flashings. Booklet covers five main types of built-up roofing construction: pitch and felt; asbestos and asphalt; asbestos and gravel; combination roofs; and mineral surfaced roofs. Each is presented with several illustrated variations, and gives specifications for laying roofing, workmanship and materials. Special sections also treat traffic and promenade roofs, flashings, construction details and application requirements. 124 pp., illus. The Ruberoid Co., 500 Fifth Ave., New York 18, N. Y.*

Glass Louvers

Clearview Plate Glass Louver Venetian Windows in Aluminum Frames. Folder describes features and operation of the louver-windows. Sketches and details show the component parts of the unit and installation cross sections in several types of construction. A table of standard window sizes is also included, along with illustrations of typical installations. 4 pp., illus. Clearview Venetian Window Co., 101 Park Ave., New York 17, N. Y.

Packaged Chimney

Vitroliner Type "E" Flue. Describes features and construction of a fabricated flue and chimney assembly. A cross section detail giving installation data is supplemented by notes and step-by-step photographs. Cut-away drawings show casings and insulation, and method of ventilating attic. Photographs demonstrate installed appearance in small houses. 6 pp., illus. Condensation Engineering Corp., 122 S. Michigan Ave., Chicago 3, Ill.

Lighting Fixtures

Lighting (Catalog No. 1). Presents an extensive line of contemporary lighting fixtures. Types include: recessed downlights with a variety of lenses, louvers and reflectors; surface mounted downlights; recessed eyeball fixture; suspended ceiling fixtures; wall or ceiling lamps with a variety of mountings, swivels and shades; and holders for fluorescent lights. All types are shown in section, with dimensions and description. 19 pp., illus. Ledlin Lighting, Inc., 49 Elizabeth St., New York 13, N. Y.

Asphalt and Plastic-Asbestos Tiles

Picture Your Floors and Walls in Tile-Tex. Model home installations of asphalt and plastic-asbestos floor and wall tiles are illustrated in full color in this booklet. Design suggestions are included for such room types as foyers, recreation rooms, bedrooms, baths and kitchens. Descriptions, color charts and maintenance product lists are given for the materials presented. 18 pp., illus. The Tile-Tex Div., The Flintkote Co., 1232 McKinley Ave., Chicago Heights, Ill.*

Aluminum Copings and Gravel Stops

Copings and Gravel Stops of Alcoa Aluminum. A recently revised brochure giving details, installation methods and features of several types of aluminum copings and gravel stops. A table gives dimensions and weights. Long and short specification forms and test results on how the aluminum stands up in different atmospheres are included. 18 pp., illus. Aluminum Company of America, Gulf Building, Pittsburgh 19, Pa.*

Bank and Office Lighting

Planned Lighting For Modern Banks and Offices. Pictures a range of general and executive offices, bank lobbies and interiors illuminated with fluorescent or incandescent equipment, or a combination of both. The text is devoted to influences of properly maintained footcandle levels with reference to efficiency, working accuracy and visual comfort. 12 pp., illus. Pittsburgh Reflector Co., 402 Oliver Bldg., Pittsburgh 22, Pa.*

(*Continued on page 246*)

*** *Other product information in Sweet's File, 1950.***

GRAPHICAL SYMBOLS: 1—Piping

These sheets reproduce sections of American Standards Z32.2.3–1949 and Z32.2.4–1949 approved in 1949 by the American Standards Assn., Inc., 70 E. 45th St., New York 17, N. Y. The project was sponsored by the American Institute of Electrical Engineers and the American Society of Mechanical Engineers.

AIR CONDITIONING

Brine Return	— — —BR— — —
Brine Supply	————B————
Circulating Chilled or Hot-Water Flow	————CH————
Circulating Chilled or Hot-Water Return	— — —CHR— — —
Condenser Water Flow	————C————
Condenser Water Return	— — —CR— — —
Drain	————D————
Humidification Line	——·——H——·——
Make-Up Water	——·——·——·——
Refrigerant Discharge	————RD————
Refrigerant Liquid	————RL————
Refrigerant Suction	— — —RS— — —

HEATING

Air-Relief Line	— —— — —— —
Boiler Blow Off	—— —— —— ——
Compressed Air	————A————
Condensate or Vacuum Pump Discharge	—o— —o— —o—
Feedwater Pump Discharge	—oo— —oo— —oo—
Fuel-Oil Flow	————FOF————
Fuel-Oil Return	— — —FOR— — —
Fuel-Oil Tank Vent	— — —FCV— — —
High-Pressure Return	— // — // — // —
High-Pressure Steam	——//——//——//——
Hot-Water Heating Return	— — — — — —
Hot-Water Heating Supply	————————
Low-Pressure Return	— — — — — — —
Low-Pressure Steam	————————
Make-Up Water	——·——·——·——
Medium-Pressure Return	— / — / — / —
Medium-Pressure Steam	——/——/——/——

PLUMBING

Acid Waste	————ACID————
Cold Water	——·——·——·——·——
Compressed Air	————A————
Drinking-Water Flow	—— ·—— ·——
Drinking-Water Return	——·· ——·· ——
Fire Line	—F————F——
Gas	—G————G——
Hot Water	——··——··——··——
Hot-Water Return	——···——···——···——
Soil, Waste or Leader (Above Grade)	————————
Soil, Waste or Leader (Below Grade)	— — — — — — —
Vacuum Cleaning	—V————V——
Vent	- - - - - - - - - - -

PNEUMATIC TUBES

Tube Runs	════════

SPRINKLERS

Branch and Head	——o————o——
Drain	—S— — — —S—
Main Supplies	————S————

(*Continued on page 173*)

This is an INLAND HI-BOND Reinforcing Bar

It not only meets but exceeds the minimum standards set up by ASTM A305-49. Its proper ratio of bearing to shearing area provides greater bond between the steel and concrete thus providing more efficient transfer of stress at splices and reducing the size of tension cracks. This means a more efficient and better looking structure.

It saves your client's money. In many instances, end hooks can be completely eliminated which means a saving in steel, fabricating and placing costs. Because a single wire loop holds HI-BOND firmly in place—even during pouring of concrete—there are savings in wire and tying time.

It is available for prompt shipment from the Ryerson Company and other leading steel warehouses throughout the middle and far west.

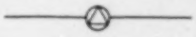
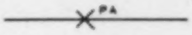
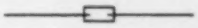
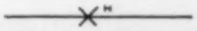
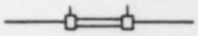
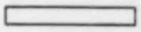
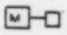
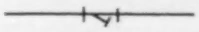
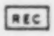
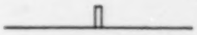
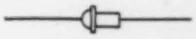
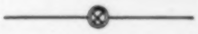
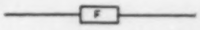
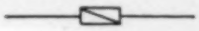
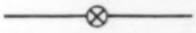
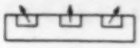
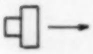
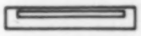
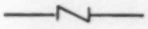
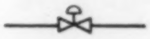
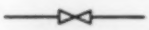
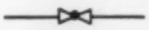
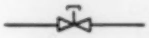
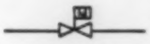
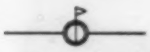
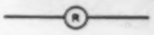
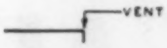
It *costs no more* than ordinary reinforcing bars!

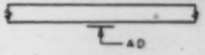
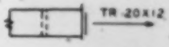
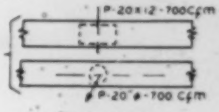
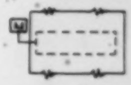
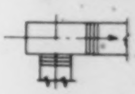
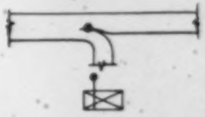
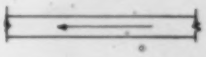
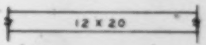
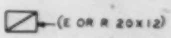
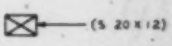
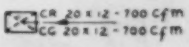
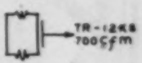
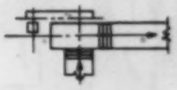
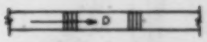
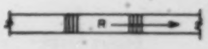
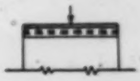
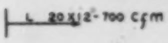
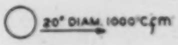
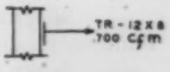
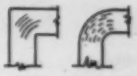
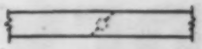
Specify Inland HI-BOND—the reinforcing bar with the built-in anchorage.

INLAND
STEEL COMPANY • Chicago 3, Ill.
38 South Dearborn Street

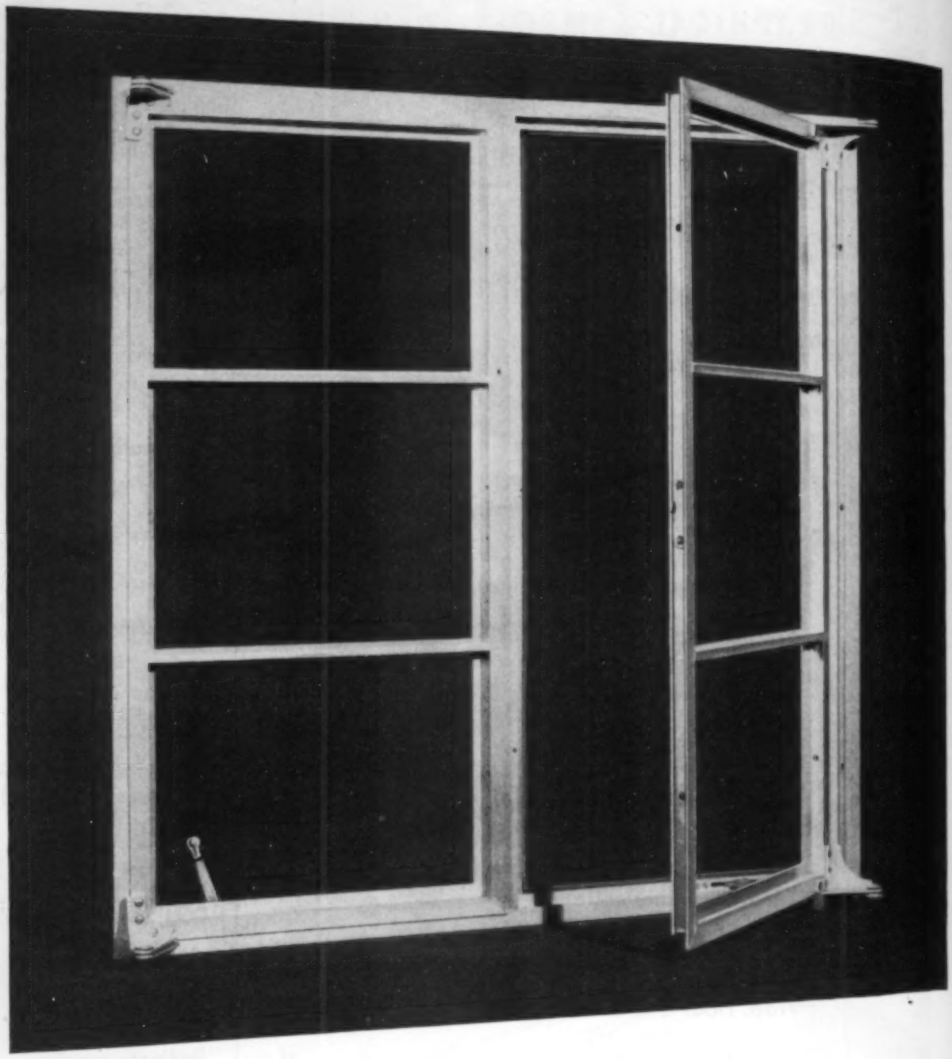
GRAPHICAL SYMBOLS: 2—Heating and Ventilating

(Continued from page 171)

HEATING	
Air Eliminator	
Anchor	
Expansion Joint	
Hanger or Support	
Heat Exchanger	
Heat Transfer Surface, Plan (Indicate type such as convector)	
Pump (Indicate type such as vacuum)	
Strainer	
Tank (Designate type)	
Thermometer	
Thermostat	
Trap, Boiler Return	
Trap, Blast Thermostatic	
Trap, Float	
Trap, Float and Thermostatic	
Trap, Thermostatic	
Unit Heater (Centrifugal fan), Plan	
Unit Heater (Propeller), Plan	
Unit Ventilator, Plan	
Valve, Check	
Valve, Diaphragm	
Valve, Gate	
Valve, Globe	
Valve, Lock and Shield	
Valve, Motor Operated	
Valve, Reducing Pressure	
Valve, Relief (Either pressure or vacuum)	
Vent Point	

VENTILATING	
Access Door	
Adjustable Blank Off	
Adjustable Plaque	 P-20X12-700Cfm P-20"φ-700 Cfm
Automatic Dampers	
Canvas Connections	
Deflecting Damper	
Direction of Flow	
Duct (1st figure, side shown; 2nd side not shown)	
Duct Section (Exhaust or Return)	
Duct Section (Supply)	
Exhaust Inlet Ceiling (Indicate type)	 CR 20X12-700 Cfm CG 20X12-700 Cfm
Exhaust Inlet Wall (Indicate type)	 TR-12X8 700Cfm
Fan and Motor with Belt Guard	
Inclined Drop in Respect to Air Flow	
Inclined Rise in Respect to Air Flow	
Intake Louvers on Screen	
Louver Opening	 L 20X12-700 Cfm
Supply Outlet Ceiling (Indicate type)	 20" DIAM. 1000 Cfm
Supply Outlet Wall (Indicate type)	 TR-12X8 700 Cfm
Vanes	
Volume Damper	

(Continued on page 175)



Window shopping stops here...

The most intensive of all "window shopping"—that of the architect and builder—must stop at the sight of Reynolds Aluminum Casements. Their superiority in design and especially in *finish* is outstanding. Their flash-welded corners assure maximum rigidity and weathertightness. Their roto-operation is smooth and dependable. And of course they have the basic advantages exclusive to aluminum windows: rustproof permanence with no need for protective painting, narrow frames of neutral tone to harmonize with any concept.

Reynolds supplies residential casement, fixed and picture windows in all combinations, standard and western types...also Reynolds Aluminum Screens to fit these and all metal casement windows. *Stop right here* and write for complete descriptive literature in A.I.A. file form. **Reynolds Metals Company,** Building Products Section, 2015 South Ninth Street, Louisville 1, Ky. Offices in 32 principal cities.

IF YOU SEE RUST YOU KNOW IT'S NOT ALUMINUM

REYNOLDS *Lifetime* ALUMINUM BUILDING PRODUCTS

Window Specifications Start Here...

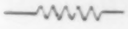
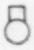
"...as manufactured by Reynolds Metals Company...made of solid extruded aluminum shapes of not less than ⅛" in thickness ...special alloy of not less than 17,000 pounds tensile strength psi...Frames shall be Zee sections 1" in depth and ⅞" in cross section, and will provide continuous double contact...All corners shall be electrically flash welded...Satin type finish and protective lacquer coating..."

REYNOLDS ALUMINUM
RESIDENTIAL CASEMENT FIXED
AND PICTURE WINDOWS

REYNOLDS ALUMINUM

GRAPHICAL SYMBOLS: 3—Air Conditioning

(Continued from page 173)

Capillary Tube	
Compressor	
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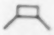
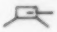
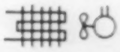
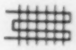
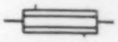
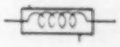
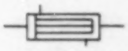
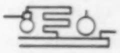
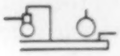
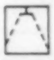
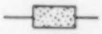
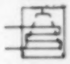
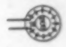
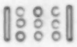
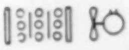
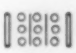
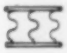
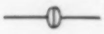
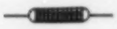
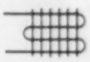
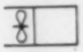
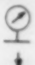
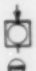
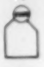
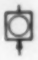
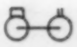
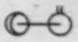
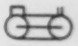
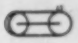
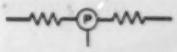
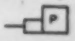
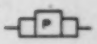
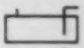
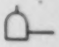
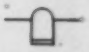
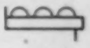
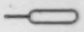
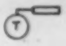
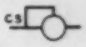
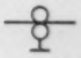
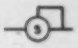
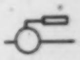
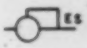
Compressor, Open Crankcase, Reciprocating, Belted	
Compressor, Open Crankcase, Reciprocating, Direct Drive	
Condenser, Air Cooled, Finned, Forced Air	
Condenser, Air Cooled, Finned, Static	
Condenser, Water Cooled, Concentric Tube in a Tube	
Condenser, Water Cooled, Shell and Coil	
Condenser, Water Cooled, Shell and Tube	
Condensing Unit, Air Cooled	
Condensing Unit, Water Cooled	
Cooling Tower	
Dryer	
Evaporative Condenser	
Evaporator, Circular, Ceiling Type, Finned	
Evaporator, Manifolded, Bare Tube, Gravity Air	
Evaporator, Manifolded, Finned, Forced Air	
Evaporator, Manifolded, Finned, Gravity Air	
Evaporator, Plate Coils, Headered or Manifold	
Filter, Line	
Filter & Strainer, Line	
Finned Type Cooling Unit, Natural Convection	
Forced Convection Cooling Unit	
Gauge	
High Side Float	
Immersion Cooling Unit	
Low Side Float	
Motor-Compressor, Enclosed Crankcase, Reciprocating, Direct Connected	

Motor-Compressor, Enclosed Crankcase, Rotary, Direct Connected	
Motor-Compressor, Sealed Crankcase, Reciprocating	
Motor-Compressor, Sealed Crankcase, Rotary	
Pressurestat	
Pressure Switch	
Pressure Switch With High Pressure Cut-Out	
Receiver, Horizontal	
Receiver, Vertical	
Scale Trap	
Spray Pond	
Thermal Bulb	
Thermostat (Remote bulb)	
Valve, Automatic Expansion	
Valve, Compressor Suction Pressure Limiting, Throttling Type (Compressor Side)	
Valve, Constant Pressure, Suction	
Valve, Evaporator Pressure Regulating, Snap Action	
Valve, Evaporator Pressure Regulating, Thermostatic Throttling Type	
Valve, Evaporator Pressure Regulating, Throttling Type (Evaporator side)	
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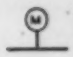
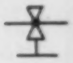
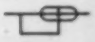
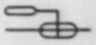
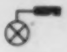
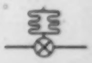
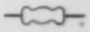
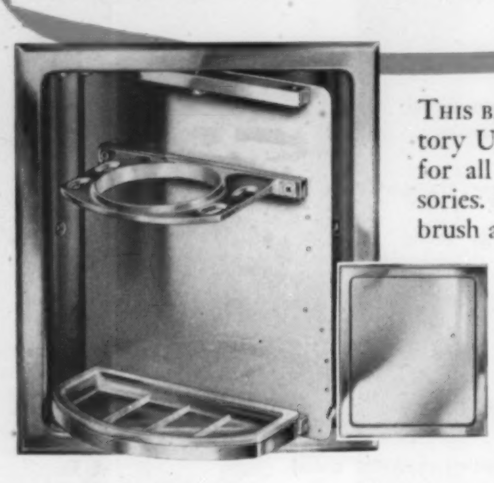
Valve, Magnetic Stop	
Valve, Snap Action	
Valve, Suction Vapor Regulating	
Valve, Thermo Suction	
Valve, Thermostatic Expansion	
Valve, Water	
Vibration Absorber, Line	

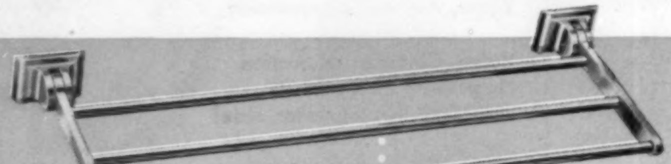
There's something **SPECIAL** *about bathrooms when accessories are* HALL-MACK

*TRADE MARK REG U.S PAT. OFF.

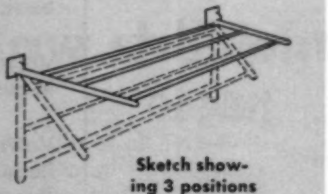
In Hall-Mack's complete selection of bathroom accessories you'll find unique *special* accessories like these—made to add the final touch of convenience and appearance to any bathroom . . .



THIS BEAUTIFUL Concealed Lavatory Unit is a perfect companion for all other Hall-Mack Accessories. Soap, tumbler and toothbrush are ready at the touch of a finger—yet smartly concealed when not in use. These bathroom necessities are mounted on a revolving panel, and only a polished chrome surface flush with the bathroom wall is visible when the unit is closed . . .



AND HERE IS a three-bar Adjustable Towel Rack—a real space-saver. It's instantly adjusted to any of three positions (horizontal, 45°, or down) and is ideal for drying hosiery, for displaying guest towels, and for bath towel storage. Drops down out of the way when not in use, yet provides so much *extra* convenience when needed.



Sketch showing 3 positions of Towel Rack

HALL-MACK
Quality
ACCESSORIES
For Every Bathroom
Style and Budget

LOOK FOR *all* of the extra qualities in bathroom accessories—*and you'll choose Hall-Mack!* Remember—there is a complete line to give you the right accessories for every bathroom need. Hall-Mack also makes a full selection of fine Medicine Cabinets and other recessed specialties. Write for details. Hall-Mack Company, 1344 W. Washington Blvd., Los Angeles 7, California.

WASHINGTON

(*Continued from page 24*)

drawn. FHA will have a much more important role under the new system than it practiced under the old. It will guide the projects from an earlier stage. Architects' fees are assured and there will be more coordination from the beginning.

Shelter Needs Acute

Just as the housing agency and the military were working out final terms of their administrative plan, Congress turned its attention to the dire need for additional shelter for Army, Navy and Air Force personnel. Sen. Lyndon Johnson (D-Tex.) started subcommittee hearings March 13 to explore the entire field. He set the stage by commenting, "We have been sitting here since last August and have hoped for something besides trailers and shacks for military personnel." He then suspended hearings awaiting further information from the services on their housing needs.

Meanwhile, the House Banking Committee approved a bill amending last year's Wherry Act. This would protect the interests of architects by assuring their fee payments in full and would permit the new FHA-military agreement to function. In short, all parties agreed the "new deal" for military housing would shortly bring something far more substantial than the trailers and shacks to which Senator Johnson referred. The Senate was expected to accept the House version of the amendment, speeding the measure on through without the necessity of Senate hearings.

As of April 1, however, the ban on applications still was in effect.

Deny Hospital Fund Increase

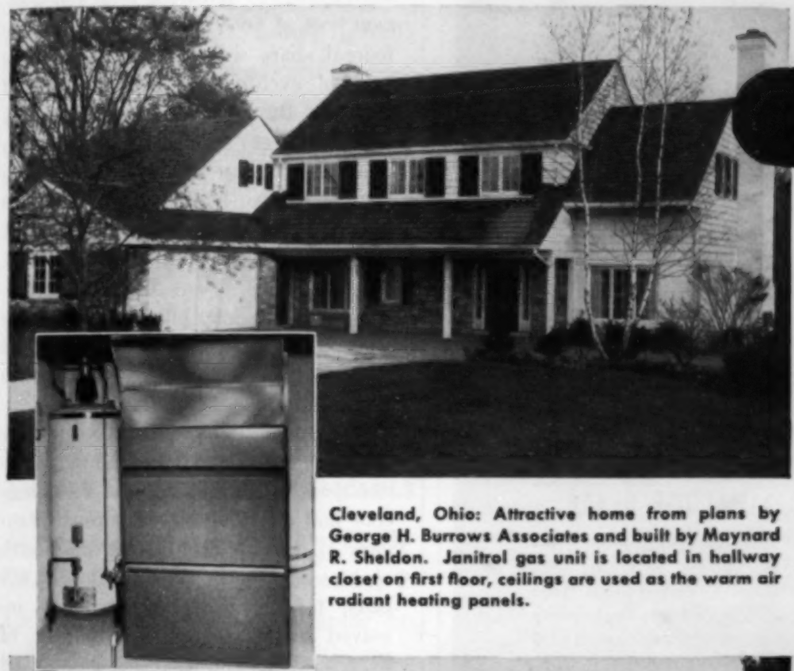
Although Congress last year authorized doubling of the $75-million-per-year figure for hospital construction grants, the House Appropriations Committee refused to add a penny in its report for the fiscal year 1951, starting July 1. Reporting the omnibus appropriations bill to the House, the committee said it had to weigh the matter in relation to all other essential government programs.

This action seemed to reflect an attitude of "let well enough alone" on the part of the House group, for it reported:

(*Continued on page 178*)

RADIANT *heating*

IS SIMPLE, PRACTICAL, ECONOMICAL WITH JANITROL

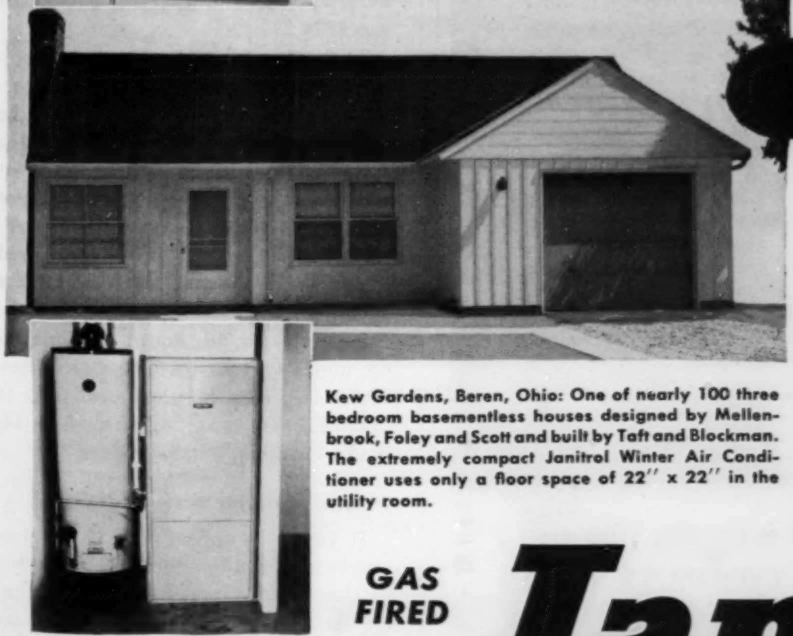


Cleveland, Ohio: Attractive home from plans by George H. Burrows Associates and built by Maynard R. Sheldon. Janitrol gas unit is located in hallway closet on first floor, ceilings are used as the warm air radiant heating panels.

Warm Air RADIANT CEILING PANELS

The system of using warm air for radiant heating offers many advantages . . . it's simple . . . it's practical. It permits greater freedom in planning room and furniture arrangements for there's no warm air or return registers. Janitrol ceiling panel installations have proved so efficient that it is possible to hold living room temperatures to a single degree difference between floor and ceiling.

Owners living in gas-fired Janitrol ceiling panel radiant heated homes report winter comfort unmatched by their previous experience with older forms of heating.



Kew Gardens, Beren, Ohio: One of nearly 100 three bedroom basementless houses designed by Mellenbrook, Foley and Scott and built by Taft and Blockman. The extremely compact Janitrol Winter Air Conditioner uses only a floor space of 22″ x 22″ in the utility room.

Warm Air RADIANT FLOOR PANELS

There's no guesswork about the solid comfort and economical operation of 80 Janitrol warm air floor radiant heating installations made 4 years ago in houses similar to the photograph at the left. Since the heating system is tied into the design and construction of these low cost houses, installation of the gas-fired Janitrol units and other building costs were materially lowered. Yet, these home owners enjoy the finest gas heating and the proven performance of Janitrol care-free comfort.

GAS FIRED

Janitrol

WINTER AIR CONDITIONERS • GRAVITY FURNACES

BOILERS • TRIPLE SERVICE SYSTEMS • UNIT HEATERS

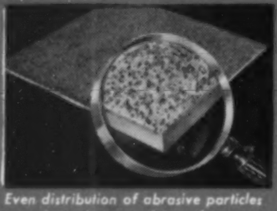
Write for complete "Kew Gardens Construction Story" and bulletins on ceiling panel heating installations.

SURFACE COMBUSTION CORPORATION • TOLEDO 1, OHIO

NOW! END SLIPPING ACCIDENTS WITH A.W. ALGRIP

(POSITIVE NON-SLIP FLOOR PLATE)

Non-slip—Even on Steep Inclines


Even distribution of abrasive particles shown by magnifying glass.

Prevents slipping on factory floors, walkways, etc.

Protects workmen and vehicles from slipping on ramps and loading platforms.

REVOLUTIONARY, NEW ABRASIVE ROLLED STEEL FLOOR PLATE

Now, for the first time you can prevent dangerous, expensive slipping accidents with A.W. ALGRIP ABRASIVE *Rolled Steel* Floor Plate. It's the non-slip floor plate that safety engineers, architects, purchasing agents and plant owners have always wanted.

A.W. ALGRIP is made by rolling abrasive grain as an integral part of the upper portion of *steel* plate. It retains its non-slip qualities for a lifetime, because as the surface wears new abrasive particles are constantly exposed.

Install A.W. ALGRIP for positive non-slip protection in all areas subjected to oil, grease or water on which men walk or climb . . . loading platforms, ramps, washroom floors, fire escapes, running boards and similar surfaces. A.W. ALGRIP prevents slipping even on steep inclines. And remember it's low in cost, easy to install, requires no maintenance, and is resistant to heat, fire and heavy traffic.

Write or use coupon for complete information about this amazing, new, non-slip floor plate now.

A.W. ALGRIP ABRASIVE ROLLED STEEL FLOOR PLATE

A Product of ALAN WOOD STEEL COMPANY
Conshohocken 20, Penna.

Gentlemen: *Please rush me complete information about A.W. ALGRIP*

Name ______ *Title* ______

Company ______ *Street Address* ______

City ______ *State* ______

Other Products: PERMACLAD Stainless Clad Steel • A.W. SUPER-DIAMOND Floor Plate • Billets • Plates • Sheets • Strip • (Alloy and Special Grades)

NEW ■ NEW ■ NEW ■ NEW ■ NEW ■ NEW ■ NEW ■ NEW ■ NEW ■ NEW

WASHINGTON

(*Continued from page 176*)

"The record clearly discloses that this sum has served well in getting hospital facilities under construction generally throughout the country. As of December 31, 1949, more than 1000 projects had been approved involving total construction cost of $664 million, of which the federal share was $209 million." This turn of events tended to throw cold water on the plans of some contractors and architects looking forward to a doubled program next fiscal year. The Budget Bureau had asked the full $150 million in federal funds for fiscal 1951 for allocation to states by the U.S. Public Health Service for this program. But the big money bill was a long way still from the President's desk, and there could be floor moves to raise the $75 million amount.

Meanwhile, Public Health's summary of the non-federated hospital construction program indicated that 1083 projects had been approved through January 31, this year. Including 185 health centers and total facilities for 53,465 beds, this projected construction involved an estimated overall cost of $724,050,999. The federal share allotted was $238,234,280.

Early this year, there were 149 projects in operation, 561 under construction, and 373 that had reached the "initially approved" stage. Each of the states and territories had had at least one hospital or health center project approved. Heaviest activity was indicated in the Southern states where need is said to be the greatest. Georgia, for example, was down for 67 approvals; Mississippi for 86; South Carolina for 63; and Texas for 69. These states naturally led, also, in number of projects operating: Georgia, 20; Mississippi, 14; South Carolina, 16; and Texas, 19.

School Construction Aid

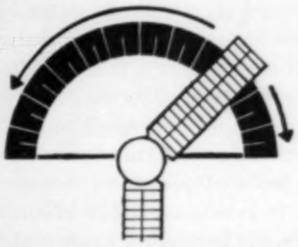
It began to appear that if Congress enacts any aid-to-education legislation at this session, it will be in the nature of loans and grants for school construction only. The House Labor Committee shelved the big Senate-passed aid bill, then turned its attention to the Lucas measure providing $600 million for school construction; half of it in grants outright, and half in loans to be made

(*Continued on page 180*)

FLUORESCENT GOES FLEXIBLE!

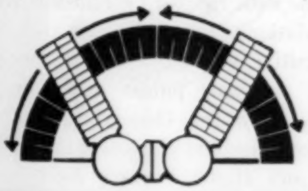
Now! For the First Time — Circles! Curves! Any Angle!

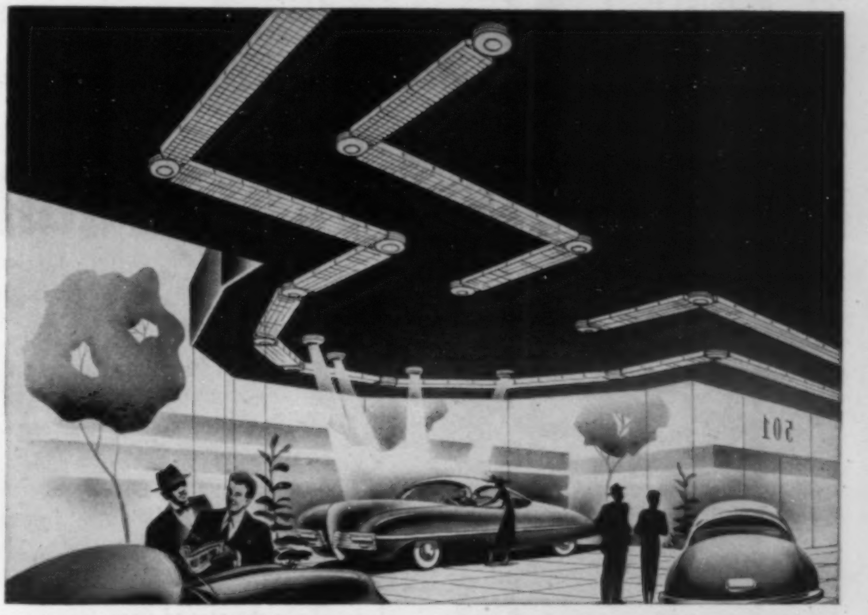
Sensationally new in concept, quality-built in the Day-Brite tradition, PLEXOLINE is making headline news. Since its recent debut, lighting experts have discovered and praised Plexoline's unprecedented ability to achieve unlimited custom-lighting effects without premium cost.



SIMPLE, PRACTICAL PRINCIPLE

Three basic elements form the PLEXOLINE system: 1. Linear section; 2. Circular accent unit; 3. Adapter fitting. The two illustrations show how the elements are used in combination to form any lighting pattern desired. All elements are complete in themselves, may be used individually.





PLEXOLINE AND IMAGINATION—AN UNBEATABLE SELLING COMBINATION!

Never before such wonderful possibilities for store and showroom lighting! Dramatic, beautiful PLEXOLINE creations put light where you want it . . . how you want it! Straight linear sections for offices, schools, colleges, banks, public buildings.

DAY-BRITE'S Plexoline

THE ONLY LIGHTING SYSTEM WITH TRULY UNLIMITED "FLEX-ABILITY"

What does PLEXOLINE mean to you? It means new freedom for your imagination. It means a line of light following a gently curving wall contour . . . angular patterns of light . . . circles . . . *any* design. It means—for the first time in history—all the advantages of custom-lighting with all the economies of a mass-produced system of fixtures.

Today, send for the whole amazing story of PLEXOLINE. Fill out and mail the coupon below. See for yourself what PLEXOLINE's unique "flex-ability" can do for you!

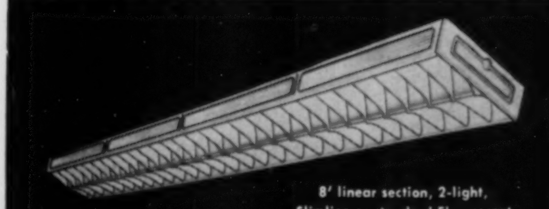
THE PLEXOLINE SYSTEM

LINEAR SECTIONS—For Slimline and standard Fluorescent, 2- and 4-light, 4', 6', and 8' lengths, surface or suspension mounted. Albalite glass side panels, interlocked steel louvers, finished in HOT-BONDED SUPER WHITE enamel.

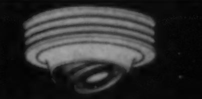
CIRCULAR ACCENT UNITS—15" and 21" diameter, with fixed Controlens* or adjustable spot mechanism. Luminous sides. Surface mounted only.

ADAPTERS — Uniform, die-formed, all-steel—in two sizes to fit circular units.

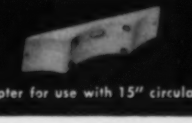
*® Holophane Co.



8' linear section, 2-light, Slimline or standard Fluorescent



15" Adjustable circular accent unit



Adapter for use with 15" circular unit

"DECIDEDLY BETTER"
DAY-BRITE
Lighting Fixtures

029

Day-Brite Lighting, Inc.
5465 Bulwer Ave., St. Louis 7, Mo.
In Canada: Amalgamated Elec. Corp., Ltd.,
Toronto 6, Ontario

Please send me your FREE booklet, "PLEXOLINE—IMAGINATION AT WORK"

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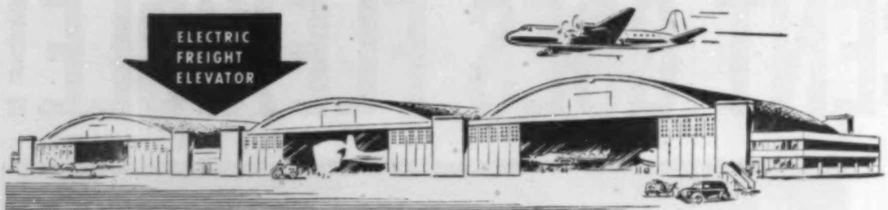
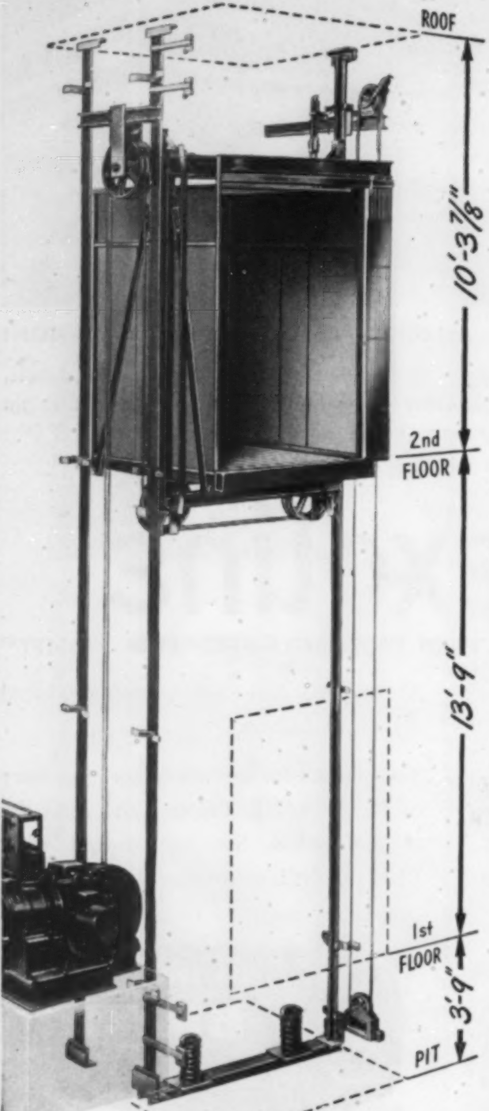
City.................. State......



THE PORT OF NEW YORK AUTHORITY • NEW YORK INTERNATIONAL AIRPORT

Fits into 10'-3 7/8" Headroom



Electric Freight Elevator Requires No Penthouse

Freight elevator service was required for the 2nd floor cafeteria and kitchen in the West Center Lean-to between newly built Hangars 3 and 4 at New York International Airport. Lean-to design set concrete roof beams 10'-3⅞" above the second floor. Hangar steel prevented a break-through for a penthouse. At the 1st floor, water existed approximately 4 feet below the grade level. In all, a tight squeeze for an elevator installation.

But not difficult for a standard Otis Self-Supporting Freight Elevator. As illustrated, the installation stops at the under side of the roof. *No penthouse is required.* Guide rail connections at each floor and the roof take care of light horizontal thrusts. *No overhead supports are required.* The guide rail structure transfers all vertical loads to the bottom of the pit. *No building reinforcing is necessary.*

Otis Self-Supporting Freight Elevators have 1,500, 2,000 and 2,500 lb. lifting capacities. Any rise up to 35' 0" —sufficient for a 3 story building. Speed is 25 feet a minute. Write for Booklet B-720-F or phone your Otis office. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

Otis ELECTRIC FREIGHT ELEVATORS

SELF-SUPPORTING • POW-R-TRUCK • GENERAL PURPOSE

WASHINGTON

(*Continued from page 178*)

by the Reconstruction Finance Corp. through state agencies to local school bodies.

But good as this proposal looked to most observers, it was criticized by the American Association of School Administrators as being inadequate to meet the staggering demand for more school space.

A spokesman for A.A.S.A. said the proposed grants-in-aid constitute the only substantial portion of the new legislation because a great many of the distressed school districts already have borrowed to their legal capacities and could not "borrow a thin dime from the government or anyone else." This left the remaining $300 million in federal assistance in the form of grants standing as a feeble attack on an immense problem. It is estimated $10 billion to $12 billion will be required in the next decade to keep up with essential school building needs.

It is hard, said A.A.S.A., to see how $300 million can even prime the pump throughout the nation.

Reorganization Plans

While Congress was tussling with all these problems, it faced the necessity of a decision on President Truman's proposal to shuffle the construction activities of various agencies more or less in line with Hoover Commission recommendations. For one thing, the Chief Executive would take the advance planning and war public works program away from the General Services Administration and give them to the Housing and Home Finance Agency. The more important to architects, the advance planning loans, was revived by Congress last October after it had lapsed since July 1, 1947. It authorizes the making of repayable loans to state and local governments for preparing plans and specifications on non-federal public works to be shelved as a reservoir for emergency purposes and to meet the needs of the community.

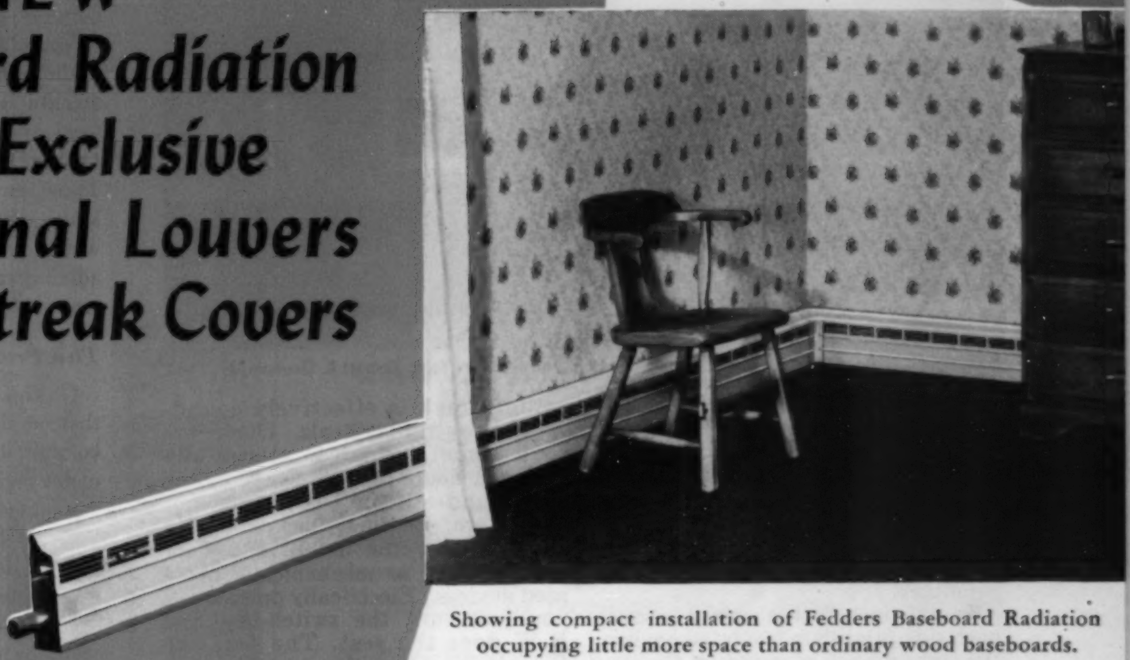
The old Federal Works Agency, and later the G.S.A., always have held the reins on this program, doling out the loans on which repayment without interest must start when construction begins.

(*Continued on page 182*)

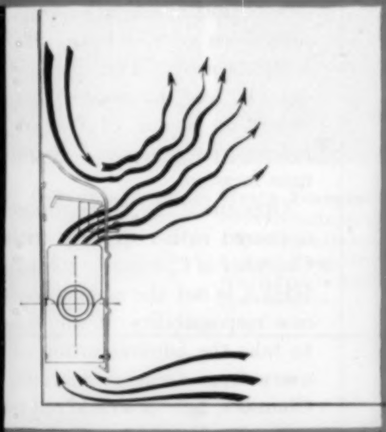
fedders

A Great Name Since 1896

ANNOUNCES NEW Baseboard Radiation with Exclusive Directional Louvers & Anti-Streak Covers



Showing compact installation of Fedders Baseboard Radiation occupying little more space than ordinary wood baseboards.



Cross-section shows how air is directed out away from walls by means of exclusive directional louvers and curved, anti-streak covers.

- Fedders offers two new and exclusive features (Patents Pending) that architects, interior decorators, contractors and home owners have been waiting for. Drawing shows how warm air is directed out into the room by Fedders built-in angular louvers in front face of cover. Cool air flows down from the wall and is directed out into the warm air stream by specially designed curved top of cover. These features greatly reduce streaking of walls and contribute to uniformity of temperature from floor to ceiling.

Write for Bulletin

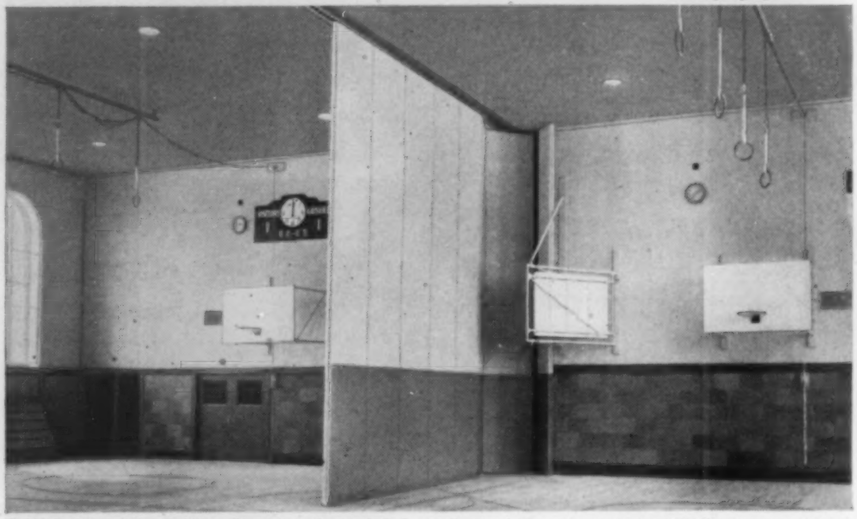
FEDDERS-QUIGAN CORPORATION
BUFFALO 7, NEW YORK

fedders-Quigan

Crowded school conditions have you in "hot water"?

Install **R-W DeLuxe FoldeR-Way Partitions**

FULLY AUTOMATIC • ELECTRICALLY OPERATED

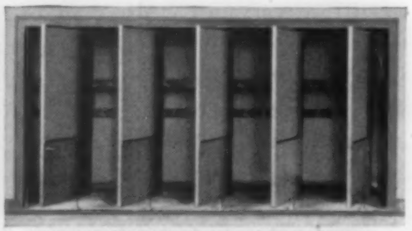


R-W DeLuxe FoldeR-Way Partition, Central School, Goshen, New York. Robert R. Graham, Architect.

Because of its high standard of excellence and performance, the R-W DeLuxe fully automatic electric soundproof folding partition is now specified by leading School Architects and demanded by progressive Boards of Education as the best solution to current problems of space and expenditure.

In the installation shown above, both side-jambs are insulated against the transmission of sound by the correct application of rubber gaskets. The clearance gap between the top of the doors and the underside of the ceiling-track is effectively soundproofed by rubber seals. Duck-covered, sound insulated, acoustically designed doors provide the ultimate in "sound-stifling" construction. Doors are positively locked to the floor without the use of any floor bolts, tracks, or mechanically operated devices. Electrically operated—you just turn the switch-key and R-W does the rest. The DeLuxe FoldeR-Way Partition goes into motion smoothly and silently—opening or closing automatically!

R-W Offers a Complete Line of Single and Multiple Action Classroom Wardrobes



R-W No. 833 Multiple Action-Master Control Door Wardrobe

Richards-Wilcox Classroom Wardrobes are outstandingly popular because they are designed to give maximum space for pupils' wraps without overcrowding—because simplicity of design and installation in wall recess means low cost. Wardrobes are available in Single or Multiple Action-Master Control Door units with chalkboards or cork boards. Each door opening accommodates eight to ten pupils.

Also...

Uninterrupted R-W Service to HOME, INDUSTRY and FARM

Since 1880

- In industry, conveyor systems to solve any overhead handling problem.
- In the home, R-W Silver Streak Vanishing Door Hangers and Aluminum Track afford quick, economical conversion to space-saving Disappearing Doors. Complete hardware for modern overhead garage doors.
- For the farm, barn door hardware up to any size, gable door fixtures, stay rollers, latches, etc; that perform up to par year after year.

Get all the facts about Richards-Wilcox cost-cutting, space-saving FoldeR-Way Partitions and Classroom Wardrobes now—write today or call your nearby branch office for complete information without obligation.

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY DOOR THAT SLIDES"

AURORA, ILLINOIS, U. S. A. • *Branches in all principal cities*

1880 RICHARDS WILCOX R-W AURORA 1950 ®

OVER 70 YEARS

WASHINGTON

(*Continued from page 180*)

President Truman's message transmitting his reorganization plan to Congress explained that HHFA, responsible for slum clearance and community development, must maintain constant liaison with local officials, appraise accurately and thoroughly the capacity of communities to finance the projects authorized by the Housing Act, and acquire a detailed knowledge of the legal authority of each participant to build various categories of public works. These, he continued, are essentially the kinds of knowledge and relationships which are essential to the successful administration of advances for non-federal public works.

The President's Position

On this premise the President argued that a single responsible agency will be able to assure that the authority under both statutes will be used to full advantage of all parties concerned.

". . . The emergence of a single community development agency will make it possible for public bodies to deal with fewer federal officials in the advance planning of their public facilities, the elimination of blighted areas, and the promotion of well-balanced residential neighborhoods. The plan will consequently lead to improvements in one important sector of federal-state and federal-local relations." So ran the Truman message.

Opposition to the proposed change appeared rather quickly with the U.S. Chamber of Commerce complaining that HHFA is not the agency to receive the new responsibility. It would be all right to take the administration of the loans away from General Services, said the Chamber, but "it should not be attached and subordinated to an agency designed to stimulate the production of housing with little or no consideration of current economic conditions." And it was the Chamber that called attention to the Hoover Commission's proposal that the advance planning loans be given to the Interior Department, not to HHFA.

Another reorganization plan was opposed strongly when the American Legion spoke out against severing certain Veterans Administration functions. The Legion opposed taking away

(*Continued on page 184*)

In General Petroleum's new Los Angeles home . . .

Architects: Welton Becket
and Wurdeman & Becket

Towel Cabinet (Scott #945) is recessed flush with wall. It's handy for users . . . helps maintain streamlined styling in the washroom.

Waste Receptacle (Scott #945) is built-in, too. Set at a handy waist-level . . . it's Scott's contribution to washroom beauty and convenience.

SCOTT RECESSED FIXTURES add beauty and convenience to modern washrooms!

When Welton Becket and Wurdeman & Becket designed the washrooms for this new General Petroleum building, they followed the current trend in architecture by recessing fixtures wherever possible.

Scott helped make the job easy . . . by offering the services of thoroughly trained consultants, plus all the priceless experience and knowledge gained while servicing over 300,000 washrooms.

Do yourself and your client a real favor by taking extra care in the planning of his personal service rooms. Your reputation will benefit . . . your client will be rewarded through the added good will of washroom users. To get Scott on your team . . . just contact "Washroom Advisory Service," Scott Paper Company, Chester, Pennsylvania.

Send for 945 dimension and installation drawing today!

WASHROOM ADVISORY SERVICE, Dept. C.
Scott Paper Company
Chester, Pennsylvania

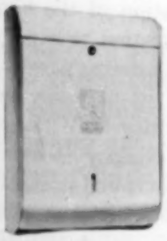
Please send me your 945 dimension and installation drawing.

Name____________________

Company____________ Title____________

Address____________________

City____________ Zone______ State____________



SCOTT

Symbol of Modern Washrooms

Trade Mark "Washroom Advisory Service" Reg. U. S. Pat. Off.

Your architectural plans

are placed in

competent building hands

For the Hudson Pulp & Paper Company, Merritt-Chapman & Scott constructed all buildings, purchased and installed equipment in this new plant at Palatka, Fla. *J. E. Sirrine Company—designing engineers.*

when you call in

MERRITT-CHAPMAN & SCOTT

When your construction project is assigned to Merritt-Chapman & Scott you can depend on close cooperation to insure that, completed, it becomes an enduring tribute to your technical knowledge and creative thought. To each job, *large or small*, M-C & S brings an organization with extensive experience in every building field...specialized facilities that assure speed, economy, and full attention to detail. You can count on Merritt-Chapman & Scott to work hand in hand with you in solving any construction problem.

MERRITT-CHAPMAN & SCOTT
CORPORATION

Your Confidence is Justified — Where This Flag Flies

Founded in 1860 . . . now in our 90th year

GENERAL OFFICES
17 Battery Place, New York 4, N. Y.

BOSTON • CLEVELAND • NEW LONDON • PASADENA, TEXAS

WASHINGTON

(*Continued from page 182*)

from VA the huge hospital construction program and placing it, along with other hospital building activities, in a new United Medical Administration. The veterans group also came out against any transferral of the G.I. home loan guarantee program now administered under the G.I. Bill of Rights by VA. It has been suggested that this be given to HHFA also.

Shorts

• The number of veterans learning construction trades in vocational schools under the G.I. Bill has tripled over the past three years. In the same time, total number of veterans learning construction trades as on-the-job trainees has fallen off by nearly one half. Veterans Administration based these estimates on surveys comparing course-by-course enrollments. There were 31,300 vocational school enrollees in 1949. Sharpest increase has taken place in bricklaying courses.

• The Office of Business Economics reports that total construction activity in January and February rose to a point five per cent above the December 1949 volume. An advance in private investment in fixed capital was attributed both to the advance in residential building activity and to the firming in business outlays for plant and equipment. This stemmed the downturn in this segment which had been evident in the last half of 1949.

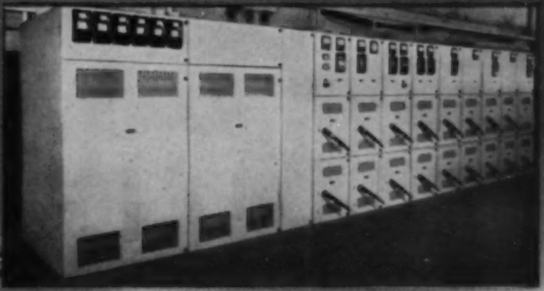
• Rep. Daniel J. Flood (D-Pa.) has brought to the attention of the Civil Aeronautics Administration new problems in airport runway design posed by the increasing use of jet-propelled aircraft. CAA Administrator D. W. Rentzel replied that his agency is aware of the changing demands and is closely watching military tests in connection with improving runway pavements. He acknowledges jet aircraft requires generally longer runways and pavements capable of resisting damaging effects of jet fuel spillage, high exhaust temperatures and high blast forces.

(*Continued on page 190*)

YOU CAN BE **SURE**.. IF IT'S

Westinghouse

THE OLD WAY . . . live-front, with fuses, knife switches and air circuit breakers—a disorderly arrangement of equipment that introduces problems of safety, flexibility and service continuity.



THE MODERN WAY . . . Westinghouse "Unitized", Low-Voltage Switchgear. Metal-enclosed air circuit breakers speed servicing . . . are interlocked for safety. All operations accomplished without exposing live parts.

Kerosene lamps in the lobby?

The question probably amuses you—for it suggests an incongruity one would hardly expect to find in today's fine new buildings. Yet . . . electrical *equipment, almost as out of date as the kerosene lamp, is often specified, purchased and installed in buildings under construction today!*

We refer to electrical control equipment, which—in view of the many services dependent upon electricity—is truly the functional heart of any modern building. Here, you must be *sure* . . . for the protection of costly equipment, the safety of personnel, and all-important continuity of service are at stake.

Westinghouse Low-Voltage, Metal-Enclosed Switchgear offers the kind of dependability you need for controlling and distributing vital electrical power. This is the modern way . . . the way that assures adequate interrupting capacity . . . that eliminates fire hazard. Breakers and all associated equipment are completely enclosed in convenient, self-supporting, "Unitized" structures. The result is safety . . . flexibility . . . reliability. Contrast this with the old-fashioned installation shown above—a type which is still being specified—and ask yourself this question:

Which type of installation will best fit the buildings I design?

For complete information on Westinghouse Low-Voltage Switchgear, send for booklet B-2296-D. Address: Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-60734

Westinghouse

LOW-VOLTAGE
SWITCHGEAR

(*Continued from page 184*)

ON THE CALENDAR

May 10–13: 82nd Annual Convention, The American Institute of Architects, Washington, D. C.

May 12–17: National Citizens Conference on Planning for City, State and Nation, conducted by the American Planning and Civic Association with the American Institute of Planners cooperating, Washington, D. C.

May 15: Final Gold Medal Exhibition, Architectural League, 115 E. 40th St., New York, N. Y.

May 17–July 16: Exhibition of entries to the International Competition for Low-Cost Furniture Design, Museum of Modern Art, New York, N. Y.

June 4–7: 37th Spring Meeting, American Society of Refrigerating Engineers, Hotel Muehlebach, Kansas City, Mo.

June 12–15: 43rd Annual Convention, National Association of Building Owners, Olympic Hotel, Seattle, Wash.

June 26–30: 53rd Annual Meeting and Ninth Exhibit of testing apparatus and related equipment, American Society for Testing Materials, Chalfonte-Haddon Hall, Atlantic City, N. J.

OFFICE NOTES

Offices Opened, Reopened

- William Hudson Borthwick has announced the opening of an office for the practice of architecture at 43 Kenneth St., Hartford 6, Conn.

- Charles W. Deichmann, Architect and Engineer, announces the opening of offices for the practice of architecture and engineering at 128 W. Solomon St., Griffin, Ga.

- The First United States International Trade Fair has opened an office on the lobby floor of the Hotel Warwick, 65 W. 54th St., New York City.

- Charles E. King, Architect, has opened an office at 19a N. Illinois St., Belleville, Ill.

New Firms, Firm Changes

- Ivan A. Bickelhaupt has joined John W. Harris Associates, Inc., of New York and Chicago, as Washington representative. A captain in the U. S. Navy Civil Engineering Corps Reserve, Mr. Bickelhaupt was public works officer in charge of construction for the Fifth Naval District until his return to civilian life in 1946.

- Robert T. Colburn has been made a member of the firm of Charles T. Main, Inc., of Boston, Mass.

- Coleman & Coleman, Architects, have announced the formation of a new partnership with John W. Greiner, A.I.A., under the firm name of Coleman, Greiner & Coleman, P. O. Box 248, Landisville, Pa.

- Rolf E. Decker, A.I.A., and Waldo B. Christenson, A.I.A., together with their associates, J. Emil Anderson, A.I.A., and Edward E. Sands, A.I.A., announce the consolidation of their architectural offices. The new firm,

(*Continued on page 192*)

ONLY NUTONE
OFFERS ALL THESE FEATURES IN
KITCHEN VENTILATORS

TOP PERFORMANCE Moves more grease-laden air than any model at same price.

EASIEST TO CLEAN Housewives love the removable center grille. (U. S. Patents pending.)

GUARANTEED Motor unconditionally guaranteed for five years. (9" and 10" Models)

EASIEST TO INSTALL A screw driver is the only tool required for low cost installation.

NUTONE TRADE MARK

U.S. Design and Mechanical Patents Pending

NON-CORROSIVE Bright chrome finish grille and baked enamel inside and out.

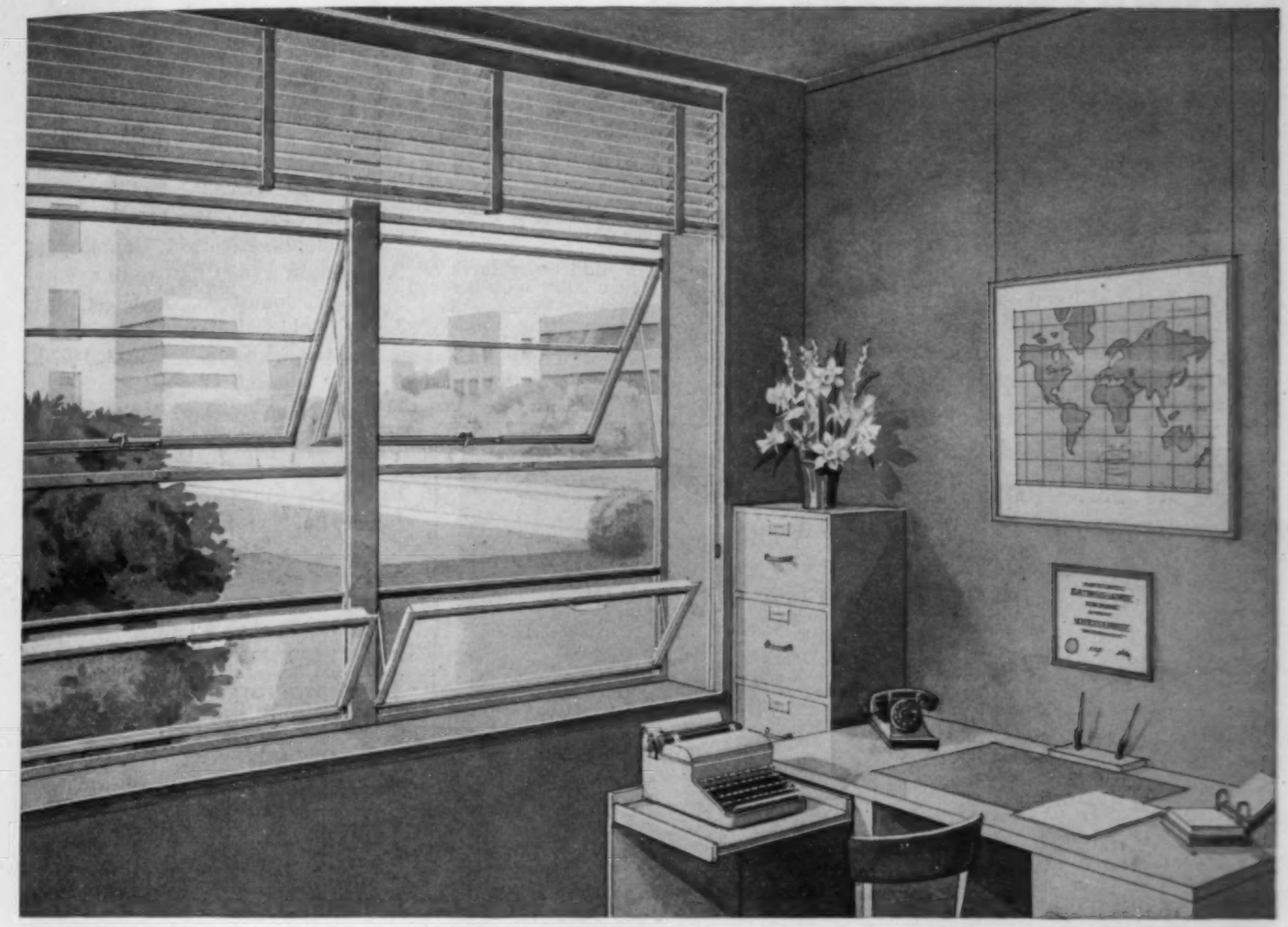
SILENT POWER Engineered for quiet, effective operation.

MODERN STYLING Designed for perfect blending with any interior.

✓ 19 MORE FEATURES

Send for complete specifications. A. I. A. FILE NO. 30-D-1; 31-H-5. Nutone, Inc. Dept. AR-4, Cincinnati 27, Ohio.

Also available — Model NF8 — in 8" ventilator. (With one year guarantee.)



NEW LUPTON "MASTER" ALUMINUM WINDOW

Here is the newest member of a great family of metal windows — the new Lupton "Master" Aluminum Window — especially designed for hospitals, schools and office buildings. Here are new opportunities in window planning . . . new standards of high durability and low maintenance costs.

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4. STURDY CONSTRUCTION Welded ventilator corners — strength where strength is needed.

LUPTON
METAL WINDOWS

THE RECORD REPORTS

(*Continued from page 190*)

Decker & Christenson, A.I.A., Architects, has offices at 1411 Fourth Avenue Bldg., Seattle, Wash.

• William J. Fedeli has withdrawn from the firm of Michaelson and Fedeli. The practice will be continued by Irvin Michaelson, Architect-Engineer, at 1507 Fox Bldg., Philadelphia 3, Pa.

• Walter J. Hubbard, A.I.A., Architect, and Stephen M. Stoltz, Associate, have announced the establishment of a new practice, with offices at 404 W. 4th St., Ottumwa, Ia.

New Addresses

The following new addresses have been announced:

Peter W. Bruder, Consulting Engineer, 200 E. 37th St., New York 16, N. Y.

Victor L. Cheek, Engineer, 7 Linwood St., Winchester, Tenn.

Egger & Higgins, Architects, 100 E. 42nd St., New York, N. Y.

Sam J. Glaberson, A.I.A., 200 E. 37th St., New York 16, N. Y.

Albert M. Goedde, Architect, 1452 State St., Chicago, Ill.

L. I. Janik, Architect, Rm. 435, 224 S. Michigan Ave., Chicago, Ill.

Robert Johnstone, Architect, 1033 South Blvd., Oak Park, Ill.

M. Michael Kane, Architect, 1457 E. 68th St., Chicago, Ill.

Nemeny and Geller, Architects, 100 W. 42nd St., New York 18, N. Y.

Porter, Barry & Switzer, Consulting Engineers, 545 LaFayette St., Baton Rouge, La.

EXHIBITIONS

Contemporary Furniture Stars At Philadelphia Art Alliance

"Inside — 1950" — the most comprehensive exhibition of contemporary furniture ever shown in Philadelphia — got under way at the Philadelphia Art Alliance April 24th. It continues until June 4th.

The exhibition has been designed and executed by Lott-Neagle Design Associates of Philadelphia.

To illustrate 1950 living, the Art Alliance has transformed a complete gallery into a 4-room apartment, entirely furnished with articles "designed to get the most out of living."

Visitors are encouraged to make themselves at home with the exhibit — to sit on chairs and sofas, walk on rugs, open drawers, adjust lamps.

Say the designers: "It has been our aim to show how the available space can be made to work efficiently without looking crowded. This has been accomplished in two ways: by the method in which the space has been broken up and by the choice of furniture, which is properly scaled. 'Inside — 1950' is not a forecast of trends. It is a statement of some of the best contemporary design available."

A.I.D. and Mural Painters Collaborate on Exhibition

Room settings designed by leading decorators around paintings by leading muralists were featured in an exhibition presented March 17–April 8 by members of the American Institute of Decorators in collaboration with members of the

(*Continued on page 194*)

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(*Continued from page 192*)

National Society of Mural Painters at the National Arts Club, 15 Gramercy Pk., New York City.

Organized and coordinated by Joseph Mullen, A.I.D., the exhibit presented 17 settings, each with its own mural, its furniture, fabrics, floor covering and accessories. Color schemes ranged from bold to subdued, mural techniques from traditional to three-dimensional.

1952 Lighting Exposition Scheduled for Cleveland

Plans to hold the Fourth International Lighting Exposition and Conference in Cleveland May 6–9, 1952, have been officially approved by the Industrial and Commercial Lighting Equipment Section of the National Electrical Manufacturers Association.

Cleveland's Municipal Auditorium, site of many national conventions, will house the Exposition and Conferences. The Planned Lighting Merit Award Competitions which have been major attractions at previous lighting expositions again will be held.

AWARDS

New York Engineers Have Student-Designed Emblem

H. H. Graves, a student at Pratt Institute in Brooklyn, has received the $100 first prize offered by the New York Association of Consulting Engineers for his design of an emblem for the Association.

Second prize of $25 went to R. Corbeletti, also a Pratt student; and five honorable mentions of $10 each were awarded to George Van Geldern, Howard Seltzer, Robert Press, Allen C. Roth and James Parkes, all students.

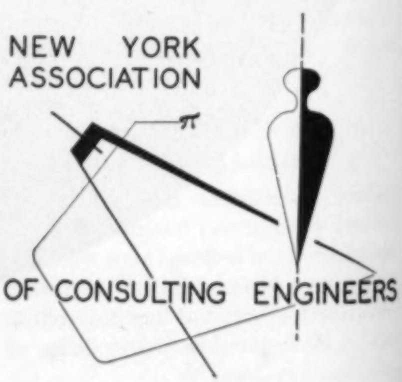
The competition, which was open to architects, architectural draftsmen and architectural students, was approved as a secondary competition by the Committee on Competitions of The American Institute of Architects.

Members of the Jury were: Max Abramovitz, architect; Morris Ketchum, architect; Philip C. Johnson, director, department of architecture and design, Museum of Modern Art; Frank G. Lopez, senior associate editor, Architectural Record; Darl Hunt, mechanical engineer; John Pickworth, structural engineer; William Eipel, president, New York Association of Consulting Engineers.

Prof. Olindo Grossi, chairman of the Department of Architecture at Pratt Institute, was professional adviser.

(*Continued on page 196*)

Below: Sketch of emblem to be adopted by New York Association of Consulting Engineers. Design was judged best of 74 submitted as expression of association's work; will appear on stationery, publications



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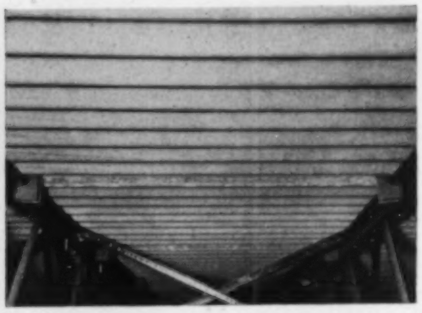

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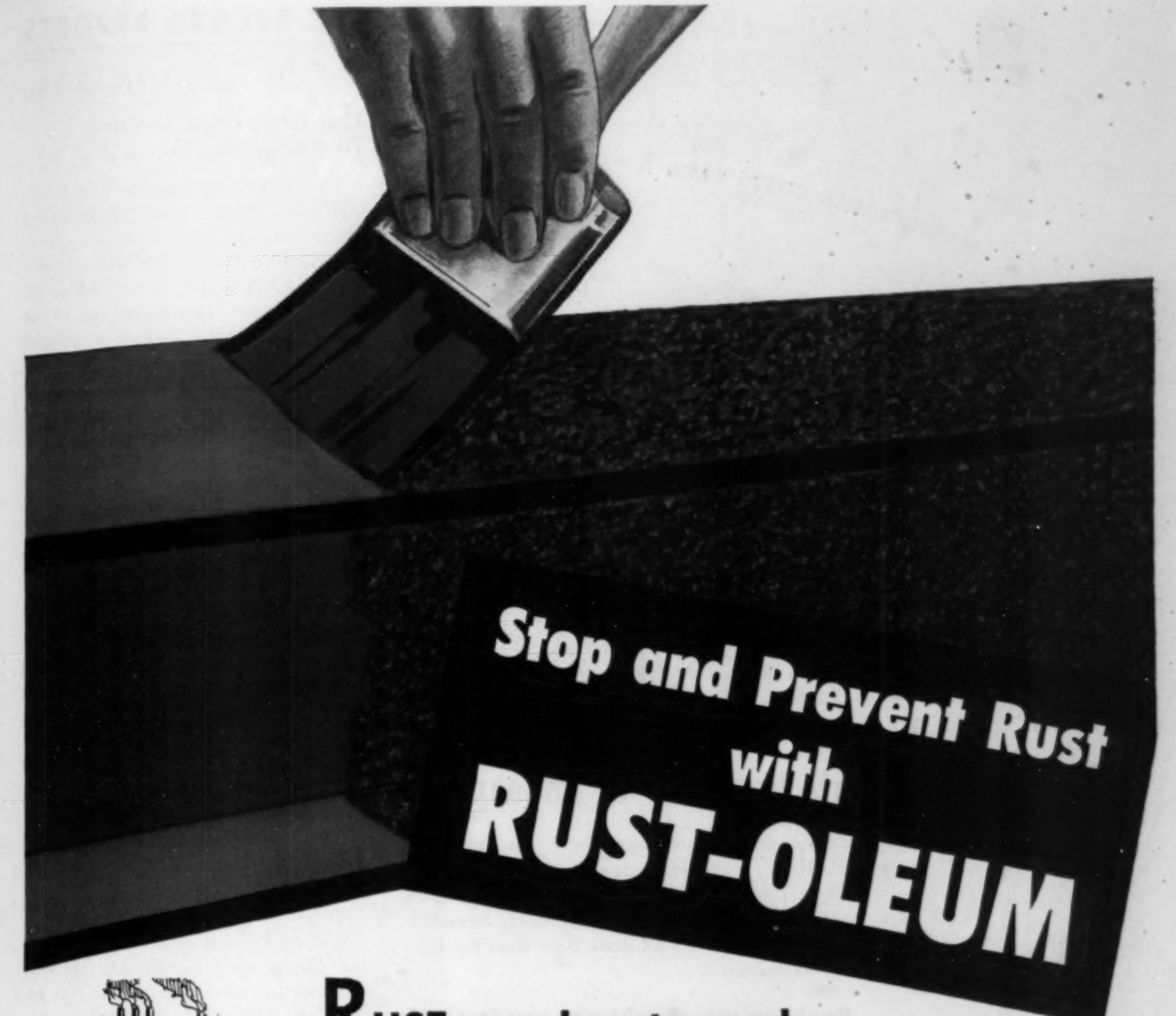
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(*Continued from page 194*)

37th Paris Prize Awarded To William H. Sippel, Jr.

The 1950 Lloyd Warren Scholarship, 37th Paris Prize in Architecture of the Beaux-Arts Institute of Design, carrying a stipend of $5000, has been awarded to William H. Sippel, Jr. of Pittsburgh.

Mr. Sippel, who is a graduate of the Pennsylvania State College at present attending the graduate school of Princeton University, was selected in a national competition from among 76 contestants in 12 different architectural schools in the United States.

William J. Scheidmantel of Forest Park, Ill., a student at the University of Illinois, is the alternate.

The award was made by a jury of architects under the chairmanship of L. Bancel LaFarge, and included Philip G. Bartlett, Charles W. Beeston, Harmon H. Goldstone, Otto Teegen, Gordon Bunshaft, Walker O. Cain, J. Gordon Carr, Alonzo W. Clark III and E. A. Van Name.

Final exercise, of one week's duration, required design of a bank building with shops and drive-in teller facilities.

Mr. Sippel will study and travel abroad for a year; in this country six months.

• William F. Little has been named by the Illuminating Engineering Society, national technical organization, to receive the 1950 Gold Medal of the Society at ceremonies during the National Technical Conference at Pasadena, Calif., August 21–25. The Gold Medal, highest honor in the field of illumination, is awarded "for meritorious achievement conspicuously furthering the profession, art or knowledge of illuminating engineering."

(*Continued on page 198*)

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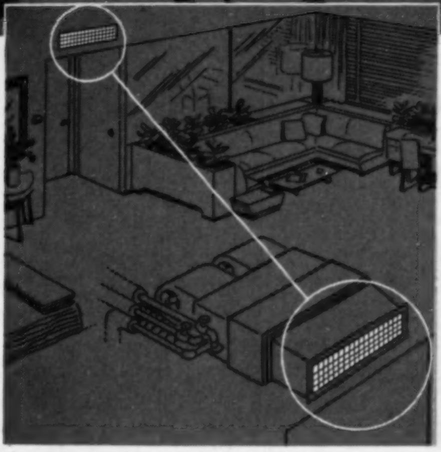

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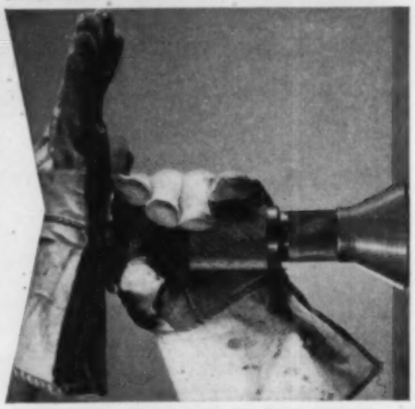

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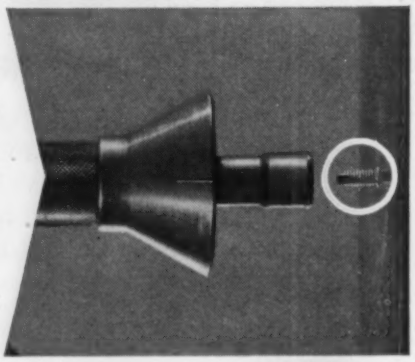

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THE RECORD REPORTS

(*Continued from page 196*)

• Joseph Amisano, a graduate of Pratt Institute, Brooklyn, who is associated with the firm of Ketchum, Giná and Sharp, New York City, has been awarded the Rome Prize Fellowship in architecture for 1950–51. A fellowship in landscape architecture has been awarded to Dale H. Hawkins, a graduate of Iowa State College and now director of planning, Nashville, Tenn., Housing Authority.

The total estimated value of each fellowship is approximately $3000, including stipend, travel allowance and free residence for one year at the American Academy in Rome.

• Robert H. Brown, chief of chemical metallurgy at Alcoa's research laboratories in New Kensington, Pa., has been chosen by the National Association of Corrosion Engineers to receive the Whitney Award for 1950 "in recognition of his outstanding contributions to the science of corrosion." The Whitney Award is international in scope, and is one of the highest honors in the field of corrosion engineering.

ELECTIONS APPOINTMENTS

• Karl Bock of New York was elected president of the American Institute of Decorators at that organization's annual conference in New York City last month. Other officers for 1950 are: Theodor Muller, New York, chairman of Board; William MacArthur, Milwaukee, first vice president; Ross Thiele, La Jolla, second vice president; Berenice D. Fligman, Chicago, third vice president; Elisabeth C. Draper, New York, secretary; Newby Murray, New York, treasurer; Genevieve Hendricks, Washington, D. C., assistant secretary-treasurer.

• Officers for 1950 elected by the Chicago Region Chapter of the American Institute of Planners are: Claire E. Oneal, Chicago, president; Kenneth L. Schellie, Indianapolis, vice president; Jack Meltzer, Chicago, secretary-treasurer.

• Carlton S. Proctor, New York consulting engineer, has been elected chairman of the Construction Industry Ad-

(*Continued on page 200*)

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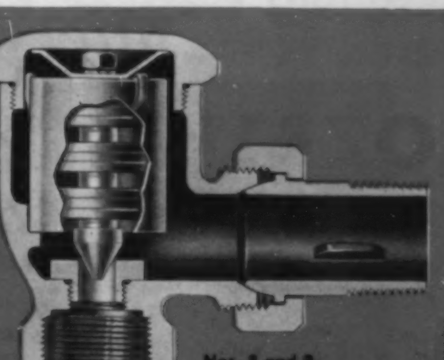

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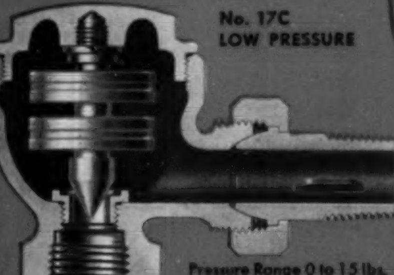

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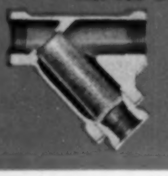

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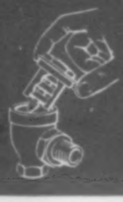

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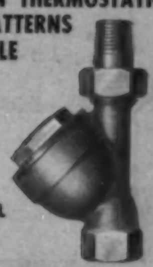

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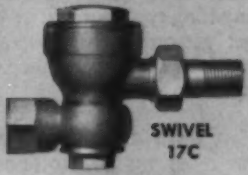
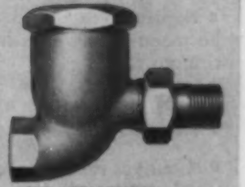


SWIVEL 17C



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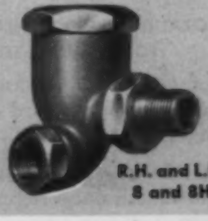

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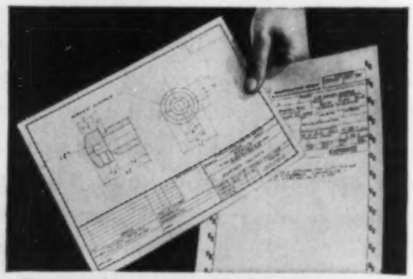

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(Continued from page 198)

visory Council for 1950–51. He succeeds James R. Edmunds Jr. of Baltimore, a past president of the American Institute of Architects.

- Officers of the Louisiana Engineering Society elected at the Society's annual meeting are: Lionel J. Cucullu, New Orleans, president; Harry P. Newton, New Orleans, first vice president; John A. McNiven, New Orleans, second vice president; John P. Fernandez, New Orleans, secretary-treasurer. The Board of Direction also includes: Austin J. Mary, president, Baton Rouge section; Ray E. Burgess, president, Lake Charles section; E. M. Freeman, president, Shreveport section; R. T. Sessums, president, Monroe section; and Michael C. Abrahm, Arthur M. Hill, Charles P. Knost, H. L. Lehmann and R. Mallard Seago.

- Appointment of five technical specialists to serve as a Board of Consultants to the New York State Building Code Commission in drafting of a one- and two-family dwellings code, and later a comprehensive code, has been announced by Col. Edward J. McGrew Jr., Commission chairman.

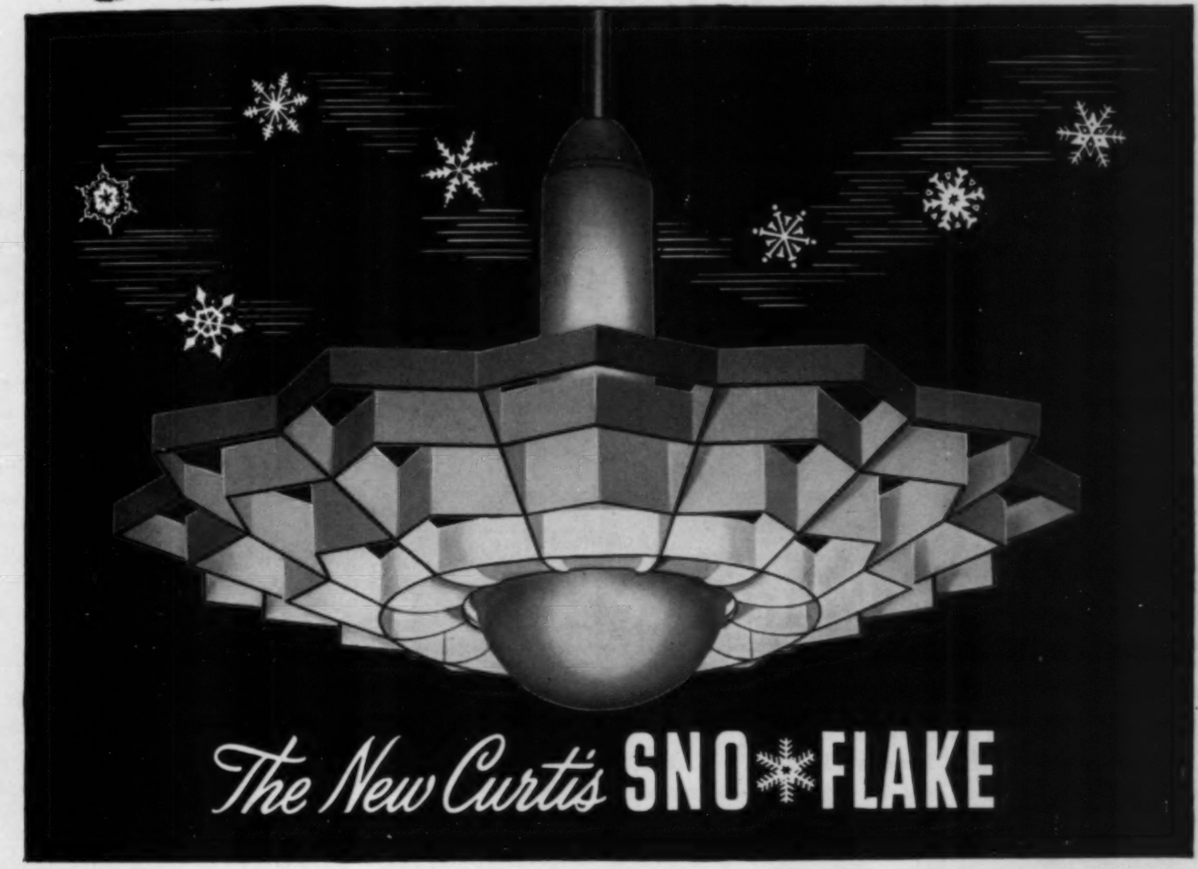
The appointees are: John O. Merrill of the architectural firm of Skidmore, Owings & Merrill, and director, revision of the Chicago Building Code; George E. Strehan, consultant to the Building Officials Conference of America, Inc., New York; George N. Thompson, chief, Codes and Specifications Section, National Bureau of Standards, Washington, D. C.; Walter C. Voss, head, Department of Building Engineering and Construction, M. I. T., Cambridge, Mass., and chairman, Standing Committee on Building Codes, A.I.A.; Ralph E. Winslow, head, Dept. of Architecture, R.P.I., Troy, N. Y.

- Mrs. Samuel I. Rosenman, former chairman of the Board of the National Committee on Housing and a former director of the Urban Land Institute, is chairman of an advisory committee appointed by the Public Education Association to study modern school building needs.

Architect members of the committee include: Max Abramovitz, Wallace K. Harrison, Ely Jacques Kahn, William Lescaze, Louis Skidmore.

(Continued on page 202)

THE MOST *Beautiful* INDIRECT INCANDESCENT LUMINAIRE

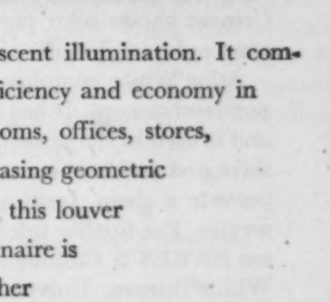

The New Curtis SNO FLAKE

DECORATIVE ❄ EFFICIENT ❄ ECONOMICAL

Curtis SNO•FLAKE presents an entirely new concept of design for indirect incandescent illumination. It combines startling beauty with many functional features. The SNO•FLAKE'S high efficiency and economy in installation and maintenance make this excellent new unit ideal for school rooms, offices, stores, and other commercial interiors. The die-cast aluminum louver follows a pleasing geometric pattern that blends with any decorative scheme. Open top and bottom, this louver requires a minimum of maintenance. Original efficiency of the luminaire is regained with each relamping. The SNO•FLAKE utilizes either 300 or 500 watt silvered bowl lamps which assure the high efficiency demanded for modern illumination.

Plan Lighting WITH THE CURTIS MAN...

Full technical details and specifications on the SNO•FLAKE are illustrated and described in Bulletin No. 8. Write Dept. SF 52 for your free copy to supplement your Curtis Catalog.



CURTIS LIGHTING, INC., 6135 W. 65TH ST., CHICAGO 38, ILLINOIS

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REMEMBER...for real economy, lasting beauty—Terrazzo made with **ATLAS WHITE CEMENT**

You give your client the most for his money when you suggest Terrazzo made with Atlas White Cement.

A beautiful Terrazzo floor made with a matrix of Atlas White is moderate in original cost . . . costs far less when you figure the years upon years of wear-resistance such a floor provides. The floor stays bright and colorful with little maintenance, except cleaning. That's real, *lasting* beauty, real economy!

Outstanding in uniformity and whiteness, a matrix of Atlas White Cement shows color pigments and aggregates at their best, in contrast or blend. Infinite variety of color tones and shadings is possible.

Atlas White complies with ASTM and Federal Specifications for portland cement. It has the same advantages when used for concrete and is used in the same way. Terrazzo, stucco, architectural concrete slabs and portland cement paint made with Atlas White Cement all provide a clean, fresh appearance and give true low-cost-per-year service. For further information on the uses of Atlas White Cement, see SWEET'S Catalog, Section 4e/7a and 13c/5, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, N. Y.

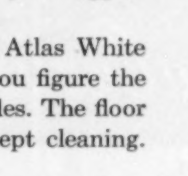
The attractive Terrazzo job above was specified by architect Ezekiel Levinson, of Philadelphia, for Goodman Auto Sales Co., Phila. Terrazzo contractor: Italian Marble Mosaic Company, Philadelphia.

AR-T-16

FOR BEAUTY AND UTILITY

ATLAS WHITE CEMENT ®

FOR TERRAZZO, PAINT, SLABS, STUCCO



"THEATRE GUILD ON THE AIR"—*Sponsored by U. S. Steel Subsidiaries*
Sunday Evenings—NBC Network

(*Continued from page 200*)

AT THE COLLEGES

Contemporary Arts Festival Is Held at U. of Illinois

One of the largest and most popular exhibits in the University of Illinois third annual Festival of Contemporary Arts, Feb. 28–Apr. 2, featured contemporary work in architecture, landscape architecture and city planning.

Included were several groups of plans and photographs representing city planning and landscape architecture by Illinois and Federal agencies.

Ten large mounts showing the proposed civic center for Chicago were loaned by the Chicago Plan Commission. The exhibit included a plan of the addition to Park Forest, Chicago suburb, showing 2500 home sites and the entire town plan. Views of the United Nations secretariat building also were shown.

M.I.T. Plastics Conference Scheduled for June 19–21

Plastics and their mechanical properties as viewed from the standpoint of research, engineering, and architecture will be the subject of a three-day conference at the Massachusetts Institute of Technology on June 19–21.

Sponsored by the M.I.T. Plastics Committee, the program will provide an opportunity for those interested in but not directly associated with plastics to hear and join in discussions of their many properties and uses. Research workers in the field will report their findings for discussion by others engaged in research as well as by engineers involved in plastics applications.

Prof. A. G. H. Dietz of the M.I.T. Department of Building Engineering and Construction is chairman of the conference's sponsoring committee. Other M.I.T. faculty members on the committee include Prof. E. A. Hauser, chemical engineering; Prof. W. M. Murray, mechanical engineering; Prof. E. R. Schwarz, textile technology; and Prof. W. H. Stockmayer, chemistry.

Of special interest to architects is the program for the third day of the conference, which was specifically arranged for architects not directly concerned with plastics manufacture but concerned with the properties of plastics as those affect their utilization.

(*Continued on page 204*)

"You can't miss when you design with Carrara Glass"

Whatever the architectural problem may be, you can rely upon Carrara Glass to help you create structures of unmatched beauty, originality and permanence. Architects have proved this for themselves in thousands of instances. There are many reasons for this: Carrara is *quality* structural glass. It is the product of exhaustive Pittsburgh research into ways and means of solving architectural problems by supplying materials that will look well and perform well under field conditions.

Carrara Glass is a finely-machined product, homogeneous, flawless. There is no lippage; joints are true and even. It's free from warpage. Every piece of Carrara Glass, whatever its color or thickness, is mechanically ground and polished. Carrara Glass is very easily handled. It can be decorated by sand-blasting, fluting, shading, or painting for ornamental purposes. It is impervious to moisture, weather, chemicals, grease, pencil marks. It won't check, craze, fade or stain. Why not give your designs the added distinction of this quality structural material? Your clients will thank you for it.

Architects: Cutting, Ciresi & Associates, Cleveland, Ohio.

Carrara *the quality structural glass*

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

THE RECORD REPORTS

(*Continued from page 202*)

Dual Exhibit Features House by Gregory Ain

A house designed by Gregory Ain to show that good architectural design is possible in a typical suburban real estate development will be on exhibition in the garden of the Museum of Modern Art in New York City from May 19 through October 19.

The three-bedroom house, planned for a lot 60 ft by 120 ft, was built under the joint sponsorship of the Museum and the publication, *The Woman's Home Companion.*

Philadelphia A.I.A. Studies Research Foundation Idea

The idea of stimulating and disseminating the results of research in the building industry seems to be much in the air these days. On March 31, the Philadelphia Chapter of The American Institute of Architects brought together a representative group of the "industry" to discuss the possible formation of a "Foundation for Research in the Construction Industry."

This Foundation as proposed by the Activities Committee of the Philadelphia Chapter, Beryl Price, chairman, would serve the metropolitan Philadelphia area and have the following activities: (1) Perform basic research in developing new materials and methods; (2) Investigate and develop existing materials and methods; (3) Establish a reporting statistical agency; (4) Set up a building materials exhibit; (5) Establish classes, seminars and lectures on construction procedures. The Foundation would be housed and administered by the Franklin Institute, according to this proposal.

In discussion from the floor, the chapter was commended for its efforts to develop better construction practices in its area. General feeling was that the scope of the program should be thoroughly studied to insure including such facilities as would be of maximum service to metropolitan Philadelphia and avoid duplication with existing agencies conducting and coordinating building research.

Below (left to right): Philadelphia A.I.A. President Louis McAllister; Franklin Institute's Dr. H. B. Allen; and Chapter Activities Committee Chairman Beryl Price

Addenda

- Pictured in the Wurlitzer advertisement on page 331 of the April issue of the Record was the Church of Christ the King, Seattle, Wash. Paul Thiry was architect for the church.

- Photographic credits were inadvertently omitted in the presentation of the University of Michigan School of Business Administration (Architectural Record, March 1950, pages 87–93). The photographers who should have received credit are: Hedrich-Blessing, the University of Michigan News Service, the State of Michigan Building Dept. and David Reider of the University.

Executive Dining Room, Chase National Bank, 18 Pine St., New York City

FROM *Soup* TO NOTES

WE are not privy to the subjects discussed in the Williamsburg Dining Room at Chase National Bank headquarters. But it is conceivable that the conversation could range from "soup to notes". However, there is something we can refer to with authority, and that's the versatility of Bergen Cabinet aged-in-the-wood craftsmanship.

Whether its panelling, or an especially designed piece of furniture (see photo above), or an entire store floor, or bank . . . you can bank on Bergen to translate the designer's plans into enduring reality.

And, it is this *enduring quality* of Bergen's wood-wizardry that makes your budget take a bow for achieving decades-trouble-free economy.

Write to Dept. A for our Portfolio of "Jobs Well Done." It's worth seeing

Bergen-sure the success of your modernization program with

BERGEN CABINET

Architectural woodwork that makes the designer's plan an enduring reality

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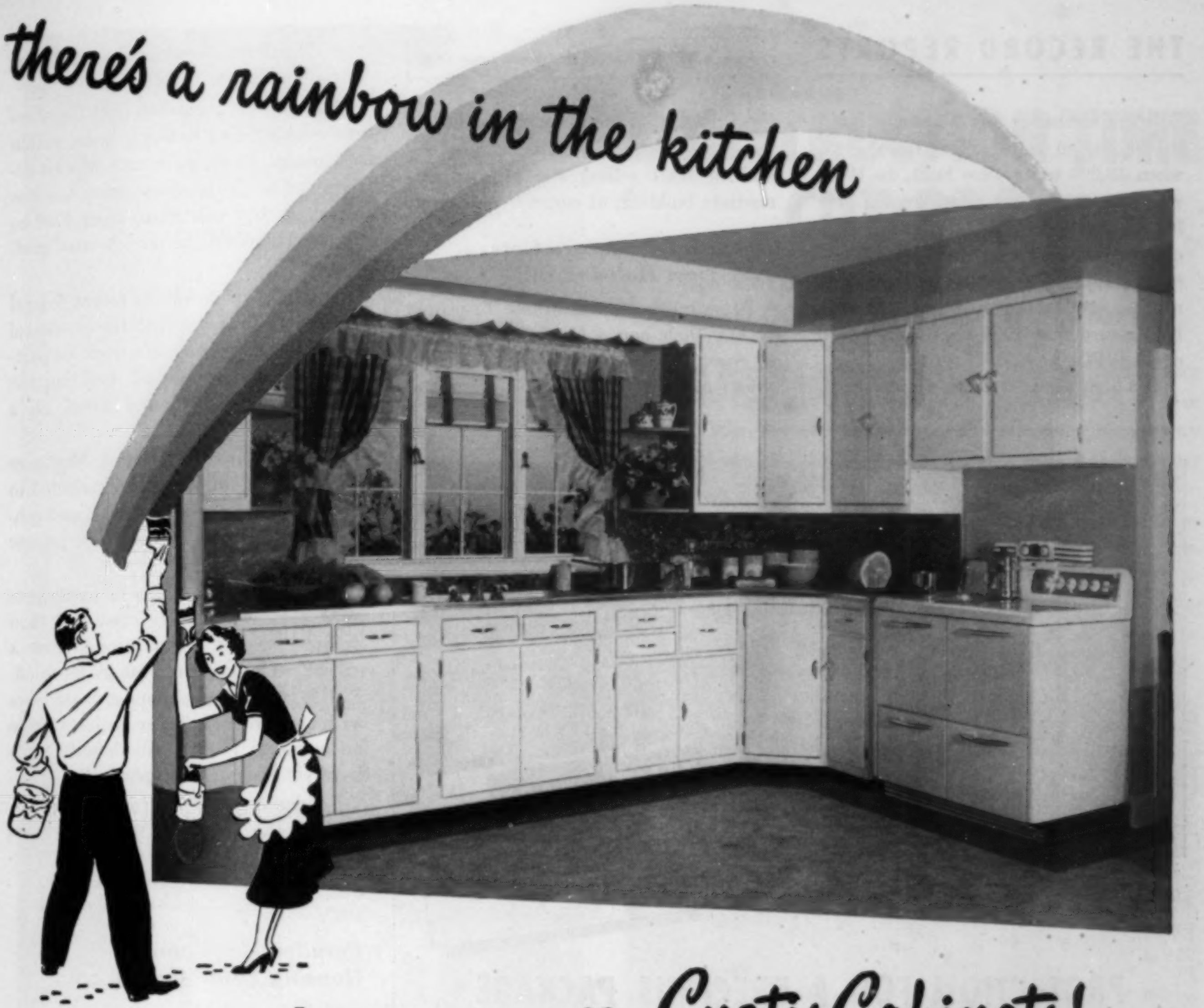
there's a rainbow in the kitchen



when you specify Curtis Cabinets!

A Curtis "cabinet wall" will insure ample storage space in the home. These standard Curtis Units will find a useful place in storeroom, laundry, sewing room, rumpus room, nursery, hall or bathroom.

If Mrs. Homeowner prefers shell pink, sage green or powder blue in her kitchen cabinets, she can have what she wants—when you specify Curtis wood cabinets. For these sturdy, lifetime-lasting cabinets are finished two coats at the factory—ready to paint in the color of the owner's choice. Colors can be changed at will, quickly and inexpensively.

Curtis cabinets arrive on the job in dustproof cartons—ready to fit together, quickly and easily, into any size or shape of kitchen. Built like fine furniture, these cabinets have modern refinements and conveniences—easy-sliding drawers—greater storage space—special cabinet units that fit "around a corner"—expert machining and workmanship—a place for everything! Hardware is furnished for each unit.

Curtis cabinets have a wide range of use in schools, church kitchens, laboratories, libraries, hospitals, laundries and clubs. Domestic science departments in schools and colleges find Curtis cabinets an aid to better teaching.

For true kitchen flexibility—in colors and arrangement—specify Curtis wood cabinets.

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CURTIS
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Curtis makes a complete line of architectural woodwork for the modern home. Make your next house "all Curtis."

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Gentlemen: Please send me literature on Curtis kitchen cabinets and other Curtis Woodwork.

I am ☐ architect ☐ contractor ☐ prospective home builder ☐ student.
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City............................*State*..................

CANADA (*Continued from page 16*)

Builders' Exchange, Mr. Stinson pointed to the rise in construction from 1945, when 48,000 units were built, to 1949, when 93,000 houses were erected. He felt Ottawa's decision to continue rent control indicates that demand still exceeds supply. N.H.A. regulations permitting smaller down payments should help insure that 1950 construction will equal 1949's, he said.

It's high time, Mr. Stinson declared, for construction men to stop using that war-born phrase "Don't build now" — and to start selling the idea of immediate building, at current cost levels.

Ontario Legislature Gets Low-Cost Housing Bill

"It is much more desirable for people to buy their homes than to rent them; it gives them a stake in the country," said Ontario's Premier Frost when the new Housing Development Act was introduced in the legislature.

The bill is designed to help the average working man to buy a house within his means. Down payments will be determined by the purchase price, and it is expected they will range from $700 to $1000. There will be no veterans' preference.

The bill, which follows recent federal legislation, provides that the provincial and federal governments work as partners in buying the land, building the houses, and sharing any losses on a 75–25 basis.

Crown company Central Mortgage and Housing Corp. has been selected to supervise the housing program, and contracts are to be granted to private builders.

Municipalities wishing to participate must first prove their need and then provide land at a fair price. Where a subsidized rental program is more advisable, municipalities must share costs with the province. These projects are to be managed locally. No definite rents have yet been agreed upon.

London and Kingston are already discussing the program with provincial authorities, and other Ontario municipalities are planning to participate.

Parallels Are Found in Housing Laws Abroad

How comparable are Canadian measures providing for public assistance to housing to those taken in other countries?

In some measure they parallel steps taken in Australia, according to the latest issue of "Housing Progress Abroad" released by the Central Mortgage and Housing Corp.

In Australia the initial cost of public housing projects is advanced by the Commonwealth Government, and losses are shared 60 per cent by the Commonwealth and 40 per cent by the state. In Canada, 75 per cent of the initial cost is financed by the federal government, 25 per cent by the provinces. Losses are shared on the same basis.

Subsidized housing is a municipal concern in Sweden, although it is assisted financially by the central government. Local municipalities provide the land for housing projects. Rentals are low, and rebates based on family size are made by the central government. To assist borrowers in making down payments, the Swedish government grants

(*Continued on page 210*)

OWENS-CORNING
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Underwriters' Laboratories, Inc.
INSPECTED
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PROTECTION FOR A PRECIOUS PACKAGE

What a reassuring feeling! Proud father experiences it when he views his helpless new offspring in the protective care of a well trained nurse. His friend, an architect, experiences it too, but for a different reason. For the community's new hospital he specified the "protection" of Fiberglas* Acoustical Tile ceilings. Combustible ceilings in hospitals can be tragic—as experience has shown.

Here's why he selected Fiberglas Acoustical Tile. The material is universally recognized by insurance interests as being non-combustible. This is based on Underwriters' Laboratories Incorporated's listing and as tested under Federal Specification SS-A-118a. Underwriters' Laboratories Incorporated's listing also shows smoke developed is negligible . . . no panic hazard, no toxic fumes.

Your own comparison will prove that Fiberglas Acoustical Tile, either Textured or Perforated, offers many other extra values, such as, dimensional stability and high sound absorbing efficiency in a material that is inherently sanitary and moisture resistant. Write us today for our A.I.A. File No. 39-B, "Fiberglas Acoustical Materials", or refer to Sweet's Architectural Files. Owens-Corning Fiberglas Corporation, Department 68-E, Toledo 1, Ohio.

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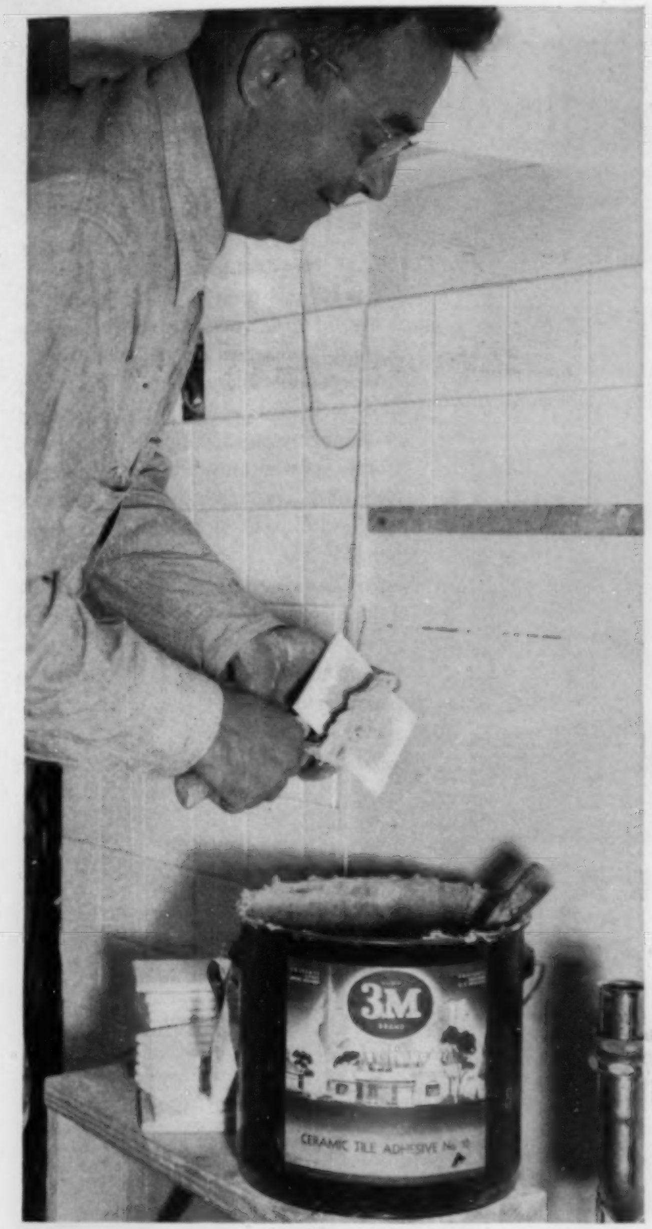

"BUTTERING" TILE at "Hathaway Hills", a quality home project in St. Louis, Mo. Method is recommended when cutting, trimming and fitting is necessary. 3M Ceramic Tile Adhesive can also be used for the faster "floating" method.

CONSTRUCTION TIME CUT 20%

3M Ceramic Tile Adhesive sets tile on 30,000 square feet of dry walls

Eight hundred kitchens and bathrooms tiled faster with 3M Ceramic Tile Adhesive! Over 30,000 square feet of tile set on plasterboard walls at "Hathaway Hills" in St. Louis, Mo. And analysis shows a timesaving of 20% over mortar-type construction.

This creamy adhesive combs on smoothly, contains no water to complicate cold-weather operations. Consistency is perfect for quick application. Rubber-base adhesive is resilient, waterproof. You can lower construction costs with 3M Ceramic Tile Adhesive. Just write Adhesives & Coatings Division, Dept. AR-550, Detroit, Mich.

HATHAWAY HILLS
VORHOF-DUENKE R.E. CO.

SPECIFICATIONS called for tiled kitchens and baths in this 400-unit housing project. Dry-wall construction was used. Tile was set safely with 3M Ceramic Tile Adhesive, even in bathroom tub recesses *and on recessed ceilings.*

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CANADA (*Continued from page 208*)

third mortgages. Similarly, under the recently liberalized N.H.A., Canadians are assisted through increased mortgage loans and resulting lower down payments.

Architects Represented at Contemporary Art Exhibit

Architects had every reason to be proud of their fine representation at the recent Exhibition of Contemporary Arts held at the Art Gallery of Toronto. Gordon S. Adamson was chairman of the R.A.I.C. committee in charge of the architectural section of the show.

Settings depicting the home, the school, the church and the office were grouped around the fountain of the Sculpture Court and were, in turn, surrounded by a generous selection of photographs and models. The photographs showed buildings of every conceivable type, all — with the exception of churches — testifying to growing adoption of the modern philosophy of design. Though eye-popping examples of radical genius were few, the contemporary approach was apparent in most shelter problem solutions. Those that did not fall within this category were at least transitional in spirit.

The models exercised their usual fascination. Noteworthy were houses by Gordon S. Adamson and James A. Murray; schools by Page & Steele and Shore & Moffat; and a home for the aged by Rounthwaite & Fairfield. Marani & Morris showed an addition to the head office of a large insurance company and the new C.N.E. grandstand. Interiors included the clever reproduction of a main banking room by Mathers & Haldenby, Beck & Eadie, and a chapel by W. L. Somerville, who also contributed a hospital intriguingly modeled in transparent plastic.

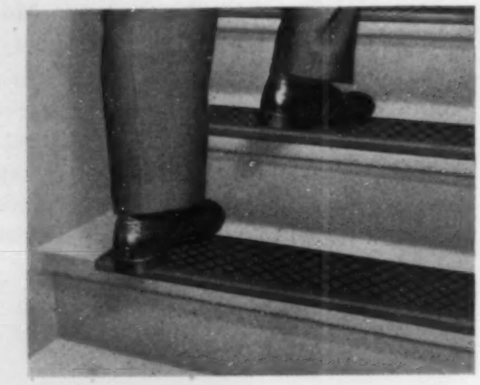
Below: Gordon Adamson, exhibit chairman

Varied Problems Discussed At Planners' Convention

Talks by Town Planning Consultant Dr. E. G. Faludi, George Prudham, M.P., parliamentary assistant to the Minister of Resources and Development, and Miss Catherine Bauer, vice president of the National Housing Conference, highlighted the recent joint convention of the American Institute of Planners and Canada's Institute of Professional Town Planners.

Dr. Faludi led a discussion on the problems of planning a new town. It must be located where people wish to live, he said, and every effort should be made to retain as many natural features as possible. He advocated provision of a rural belt a few miles wide and mentioned the need for care that the site

(*Continued on page 212*)



UNPROTECTED STAIRS CAN BE A

hazard FOR **up** TRAFFIC!

Specify FERALUN* Safety Treads In At Least 4″ Widths to Prevent Slipping and Wear

As the illustrations show, UP traffic needs the underfoot "grip" of abrasive particles embedded in a tread *at least 4″ wide.* DOWN traffic needs the same safety feature on the tread nosings as well.

Feralun treads are made to provide full protection from this "double traffic" all stairways must serve. They always have abrasive granules in the nosings —for the *down* traffic, and should be wide enough (at least 4″) to protect the *up* traffic as well. *Note action photos showing points of foot contact which are also points of slipping and wear.*

Not only do these sturdy cast iron abrasive treads give underfoot safety *up* and *down*, but they also give protection from wear as well. Installations of Feralun treads are still giving maintenance-free safety after more than a quarter century of continuous use.

For full information on Feralun and other underfoot safety products, see Sweet's File, Architectural, Sec. $\frac{13a}{10,}$ or write to:

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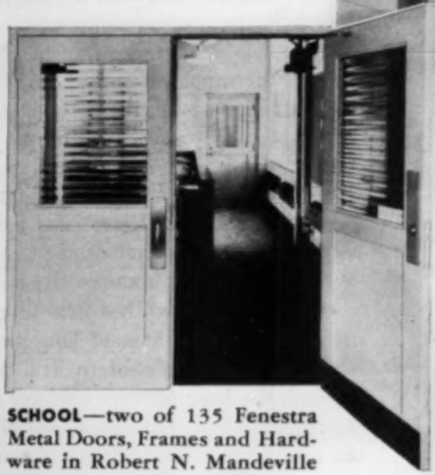
USE FERALUN TREADS AND BE SAFE ..."UP AND DOWN"

*Reg. U. S. Pat. Off.

These high-quality, low-cost Door Units take the Toughest Treatment... *and still look like new!*

STADIUM—Fenestra Entrance Doors in the Stadium at Grand Rapids, Michigan.

Architect: Wilfred P. McLaughlin, Grand Rapids
Contractor: George Datema & Sons Builders, Inc., Grand Rapids



SCHOOL—two of 135 Fenestra Metal Doors, Frames and Hardware in Robert N. Mandeville High School, Flint, Mich.

Architect: Bennett & Straight, Dearborn, Mich.
Contractor: Karl B. Foster, Flint, Mich.

SUPER MARKET—Fenestra Entrance Doors, Frames and Hardware in Eberhard's Super Market, Grand Rapids, Mich.

Same Architect and Contractor as Stadium.

A stadium entrance jammed with jostling crowds. School kids opening classroom doors with their feet. A super market seething with shoppers. In and out . . . out and in . . . all day long. That's tough treatment! And that's one of the reasons why Fenestra* Hollow Metal Doors were selected for those spots. They won't sag, warp, swell, shrink or splinter . . . an occasional coat of paint makes them look like new.

Some of the other reasons:

1. **High Quality**—Fenestra Hollow Metal Doors are made by craftsmen long skilled in steel fabrication. Each door is insulated for quiet performance. Each comes wrapped to protect the gleaming finish.
2. **Complete Unit**—Door, strong steel frame and shining hardware, designed as an attractive unit, ready to install.
3. **Low Cost**—Standardized, Fenestra Doors can be produced in great volume for maximum manufacturing efficiency. Mortising, drilling, tapping and prime painting are all done *at the factory.* To install, builders just bolt the frame together, attach frame to floor and anchor to walls, screw on template locks and hinges, hang the door.
4. **Delivery in 2-3 weeks**—Action is taken upon receipt of your order. Local stocks can usually deliver immediately.

Fenestra Doors with the Underwriters' B Label are also available. Call your Fenestra representative, listed in the yellow pages of your telephone directory or . . .

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Please send me, without obligation, information on Fenestra Stock Hollow Metal Doors.

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Company ____________________
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CANADA (*Continued from page 210*)

is not so isolated it cannot be connected with the general transportation scheme.

Recommending deliberate planning to avoid segregation of population groups by income, Dr. Faludi pointed out that all types and income groups of society must be attracted, and there must be bungalows and apartment buildings, large houses and small, to meet the life cycle of the different families and the needs of all income groups. The developing agency should be ready to step in at any time to encourage certain types of new industry, or discourage others, to secure the best balance of population, he said.

The town design must be economically sound, he warned, adding that capital cost of development is less important than the operative cost.

What is good for the town is good for the nation. That was the message brought to the convention by Mr. Prudham, who said Canada is now organizing her resources and planning her future growth, through the resources development program, much as a town planner organizes a community. Heavy expenditure on resources development is one of the main features of Canada's 1950 investment program.

Today's new freedom for the planner was hailed by Miss Bauer, who noted that social and economic segregation is no longer taken for granted in building. Architects now are designing new housing for various income groups and there is no reason why these groups could not be mixed together, she declared. Miss Bauer remarked that racial segregation, too, is being questioned in the northern United States.

Discussing various ways of handling modern metropolitan sprawl, she said one method is prohibition of haphazard decentralization and building up of central densities. Another she mentioned as popular in England is grouping of new residential areas and industries in relatively independent communities well away from the city.

Miss Bauer urged research to give planners a clearer idea of how people live and how they want to live. Such research has been used by industry and the armed forces, but scarcely at all in the fields of housing and city planning, she pointed out.

Breuer Talk Well Received

People who heard the recent address by Marcel Breuer at the Museum Theater in Toronto, under the sponsorship of the Architectural Club of the University of Toronto, were amply rewarded.

Mr. Breuer, who was introduced by Prof. James A. Murray, gave an account of his philosophy of design within the terms of reference established by residential architecture.

A plan should be fluid, not necessarily flexible, said Mr. Breuer, in order to use space with maximum efficiency and interest. Not only walls but roofs and floors as well could be employed to achieve the desired results, he noted.

Mr. Breuer expressed his belief that functionalism is not the be-all and end-all of design and listed as other essential factors to be considered economy, construction and esthetics. For example, he said, a beautiful view might indicate the need for a window; but the window

(*Continued on page 214*)

STATE
MADISON
BUILDING
212
Ellison

the Balanced Door in THE STATE-MADISON BLDG., Chicago, Ill.
Architects Holabird, Root & Burgee

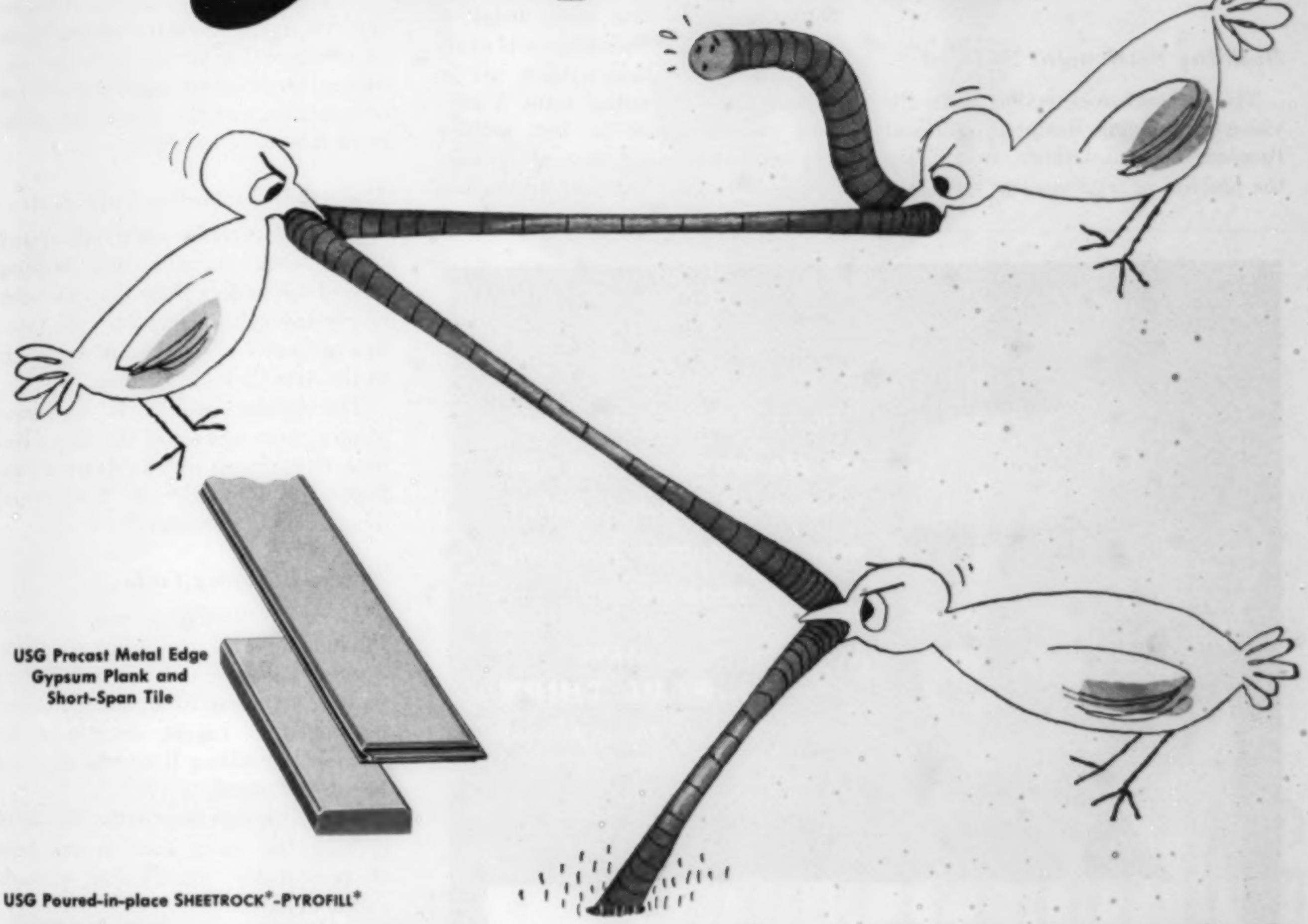
The Door that lets
TRAFFIC through QUICKLY

Ellison

ELLISON BRONZE CO.
Jamestown, New York
representatives in 71 principal cities

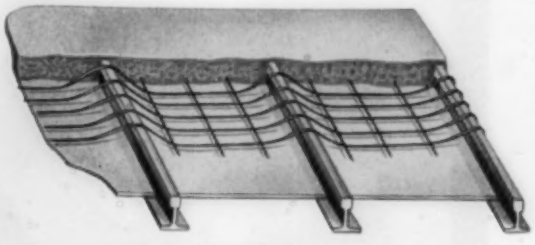
the BALANCED DOOR

3 way stretch

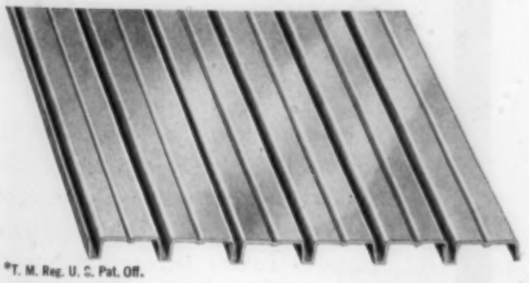


USG Precast Metal Edge Gypsum Plank and Short-Span Tile

USG Poured-in-place SHEETROCK*-PYROFILL*



USG Steel Roof Deck



*T. M. Reg. U. S. Pat. Off.

What does "3-way stretch" mean to you, as an architect?

Plenty! . . . for this term suggests the *completeness* of the U.S.G. line of roof decks. With poured-in-place gypsum, precast gypsum and steel deck, the U.S.G. line has the *flexibility* to cover any of your plans, whether they call for a pitched, flat or curved roof.

Your U.S.G. representative will give you complete information about U.S.G. roof decks—phone or write him today. If you have a specific problem, he will gladly go over it with you and come up with a dependable recommendation—one that's completely unbiased *because United States Gypsum offers all three types of roof decks.*

All U.S.G. roof decks are incombustible, lightweight, strong, quickly installed and easy to maintain. Be *sure* of your next roof deck—*consult* U.S.G. . . . *specify* USG.

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UNITED STATES GYPSUM

United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

CANADA (*Continued from page 212*)

need not be a single expanse of glass if the cost were out of line, the principles of good building violated, or the appearance of the house marred.

Building Settlement Studied

The soil mechanics section of the Division of Building Research, National Research Council, Ottawa, is studying the problem of settlement of buildings.

In several Canadian cities, compression of foundation soils has caused structural strain and damage. Soils are being analyzed from various areas through consolidation tests; and it is hoped, when more information is available, that their characteristics will be evident through routine tests. A two-unit consolidometer to test samples 2½ in. in diameter is now being built, and construction of apparatus to test larger samples is already being planned.

A portable water leveling device has also been created and built for use in this important study, and early surveys show that levels can be read with this instrument to a precision of 0.01 in.

To learn how much gradual deformation can be withstood by different types of structures, a survey is to be conducted, checking the condition and age of buildings, and the amount of settlement they have undergone.

P.Q.A.A. Launches Talk Series

Problems of traffic and transit as they affect town planning and building formed the subject of the first of a series of evening talks planned by the Province of Quebec Association of Architects at the Arts Club of Montreal.

The speaker was C. E. Campeau, master plan engineer of the City Planning Department and secretary to the Board of Research on Traffic and Transportation Problems.

Revise Building Code

A simplified and revised National Building Code for smaller areas has been worked out and will be distributed shortly, according to an announcement by Robert F. Legget, director of the division of Building Research, National Research Council.

This is the first step in the big job of revising the entire code in the light of present-day construction methods and materials.

(*Continued on page 216*)

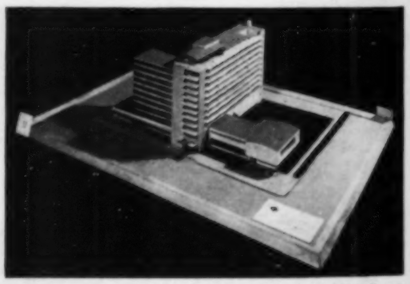

Photo: Eaton's College Street

Photo above shows model of hotel for London, Ontario, designed by Edward Hagarty. The model is one of a group of architectural students' models currently on display at Eaton's Department Store in Toronto. They are the work of the first graduating class of student veterans at the School of Architecture, University of Toronto. The 28 projects in miniature range from a city hall to a zoo, from a television station to a yacht club. The exhibit has been the focus of wide interest

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SAYS
PAUL THIRY
Noted Architect

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A free box of 4" x 4" samples of Amtico in standard ⅛" gauge and all 22 colors sent; with illustrated literature, on request. (Write Dept. AR-3)

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RUBBER FLOORING

AMERICAN TILE & RUBBER COMPANY, TRENTON 2, N. J.
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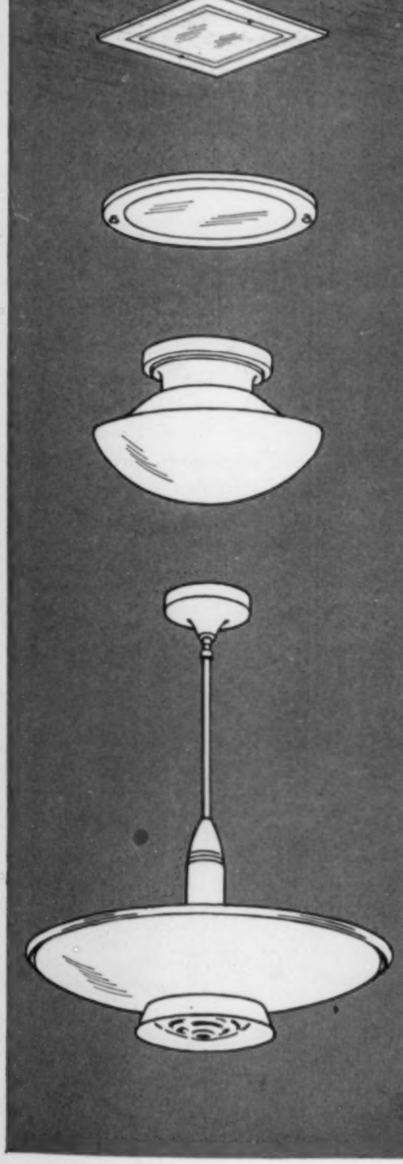

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you can achieve it with

UNIFIED LIGHTING

Because harmony in architectural design is so essential to a pleasing result, architects and engineers quickly appreciate the advantages of Unified Lighting.

Unified Lighting is a broad grouping of lighting equipment meeting all commercial applications . . . suitable to the varying needs of different locations . . . yet each unit harmonizes in style characteristics and in finish to blend into conformity of design.

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INCLUDING RECEPTOR AS WELL AS WALLS

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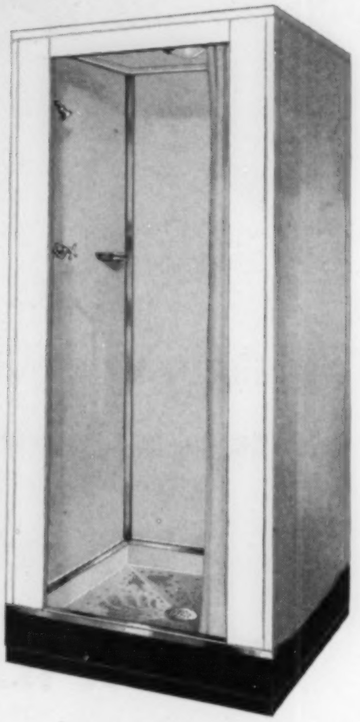
NEW
BEAUTY



Now you can meet your clients' individual tastes in bathroom planning by specifying Weisway Cabinet Showers in gleaming colors which harmonize with other colored bathroom fixtures.

Weisway colors are

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- San-Tan
- White

The trend to color in all bathroom fixtures and the rapidly growing demand for separate shower baths can both be met by specifying Weisways — the *quality-built* Cabinet Showers.

Complete Weisway cabinets, including the exclusive Foot-grip, No-Slip vitreous porcelain floor, are now offered in a selection of appealing colors —chosen after careful study of public preference as revealed in the actual purchase of bathroom fixtures.

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CABINET SHOWERS

Your reputation is safe when you specify Weisways—safe as to quality, safe as to installation, with nothing left to chance at the job site; safe as to client satisfaction through the years. Many thousands of Weisway owners have testified to this satisfaction during the past 25 years.

Mail Coupon Now FOR NEW CATALOG IN COLOR

Contains detailed information and specifications on the complete Weisway line, including samples of the five sparkling colors in which Weisways are now available. This new catalog should be in your files — mail coupon or write for it now!

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503 Weisway Building, Elkhart, Indiana

Please send your new catalog of the complete line of Weisway Cabinet Showers.

Individual

Firm name

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City State

CANADA

(*Continued from page 214*)

In Builders We Trust?

The United States is to erect a new consulate on Toronto's University Avenue — and without the formality of a city building permit.

Normally, plans must be approved by the buildings department before a permit is issued and construction can begin. But Washington requested the unique privilege in this case on the ground that certain secret features will be embodied in the new consulate.

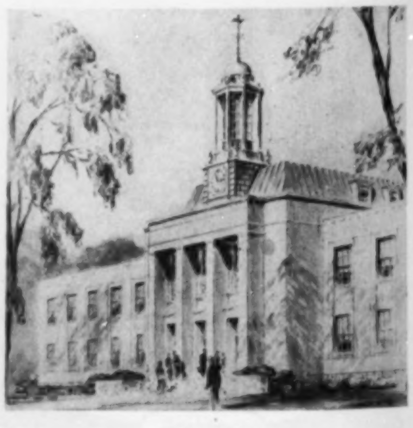
Uncle Sam didn't get his way without an argument. Buildings Commissioner Kenneth Gillies huffed, "How are they going to keep the builders from knowing what goes into the building? Are the builders to be considered more loyal than civic employees?"

But Toronto's Board of Control conceded that among 7000 civic employees there might be a disloyal few — and the U. S. Government now needs no permit.

Engineering Graduates Seen Likely to Top 1949 Record

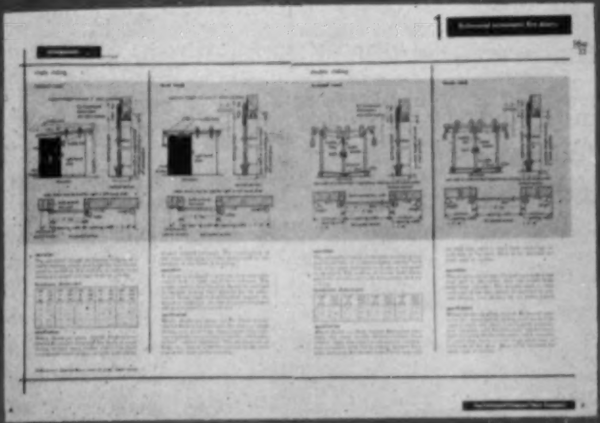
Figures collected by the Ministry of Labor suggest that 1950 engineering graduates will be even more numerous than in record-breaking 1949, when there were 3200 graduates.

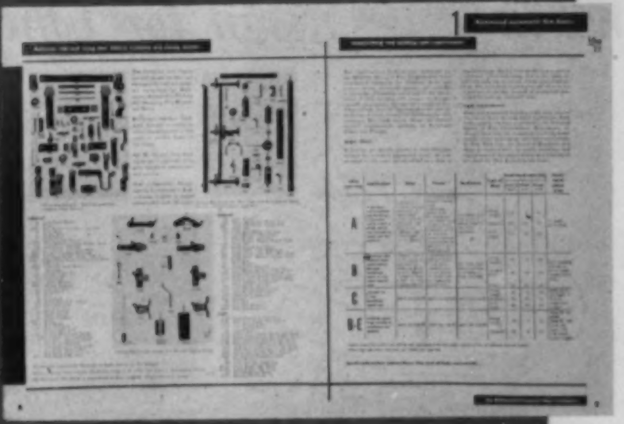
Questionnaires have been sent to about 10,000 employers in an effort to find suitable jobs for this year's graduates. Wider canvassing of smaller firms is expected to turn up new openings.



Above: Photo of rendering of city hall for Peterborough, Ont. The all-stone building is designed in T-shape. Marani and Morris of Toronto, Ont., are architects

does Sweet's service cost?





"I'd like to have all manufacturers put adequate catalogs in Sweet's File— *but it must cost them a pile of money."*

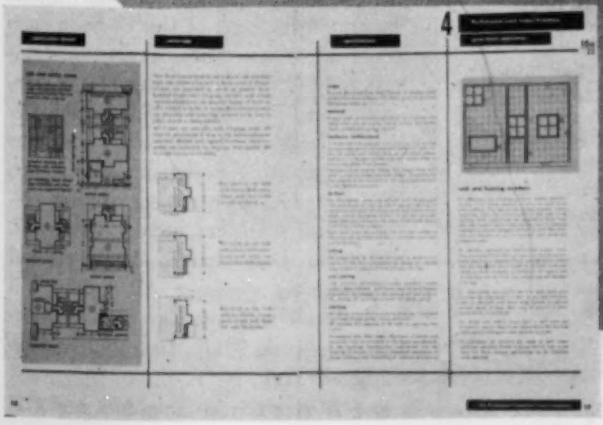
We have heard that from a number of architects. Maybe you have had the same idea.

The cost of Sweet's service is surprisingly low, especially when you consider that the charges include catalog preparation, printing, filing, distribution and a year's maintenance in recipients' offices.

For example, a manufacturer can have Sweet's design, produce and deliver 17,000 copies of a 20-page, two-color catalog in Sweet's File, Architectural, for 27 cents a copy. If he wishes Sweet's to distribute additional copies to other groups in the building field, the cost per copy is substantially lower. The same economy applies proportionately to smaller or larger catalogs.

In most cases, Sweet's service charges compare favorably with the many cost items involved in individual handling. The important point is that the manufacturer who employs Sweet's has the assurance that every copy of his catalog is always instantly accessible in the right place. Thus he serves your convenience and at the same time, his own interests.

Under Sweet's plan of distributing manufacturers' catalogs in bound files, everybody gains.



Sweet's Catalog Service

division of

F. W. Dodge Corporation

119 west 40 street, N. Y. 18

PRODUCTS

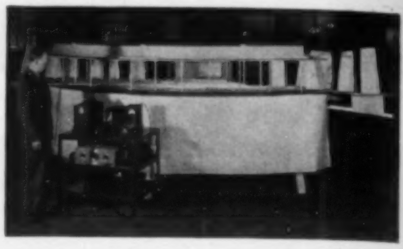
(*Continued from page 167*)

Portable Electric Plant

Designed for applications needing a portable source of electric power, the *Onan Model O4AH* electric generating plant is said to operate for five hours on a single gallon of gasoline. The unit is 400 w, 60 cycle, a-c, and is adapted and equipped to operate low-wattage, motor driven equipment. The manufacturers recommend it for lighting and for appliances in homes, stores, trailers, farms, etc, located in rural areas. The generating plant is 19 in. long, 14¼ in. wide and 16¼ in. high. The units are available in manual or remote starting models. D. W. Onan & Sons, Inc., 498 Royalston, Minneapolis, Minn.

Prediction of Building Acoustics

According to scientists at Armour Research Foundation of Illinois Institute of Technology, prediction of acoustics of a structure before it is built is now possible through ultrasonics. The method was used in a study of future acoustical properties in the new music pavilion, designed by Holabird, Root and Burgee, to be built this spring for the Ravinia Festival.



Ultrasonic sound tests on scale model predict acoustics of proposed structure

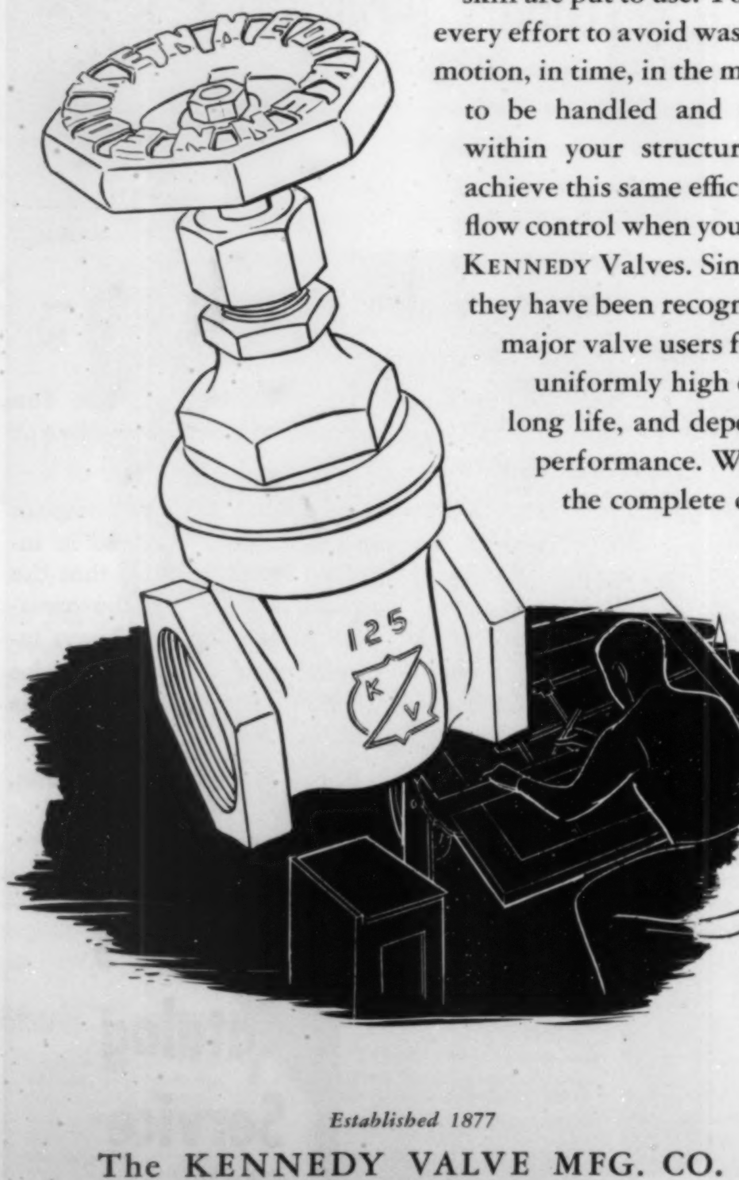
The studies were based on the theory that the use of sound waves in proportion to the size of a scale model would give accurate acoustical information. A scale model 1/20 the size of the proposed pavilion was used with ultrasonic test sounds 20 times the frequency of an average orchestra's music. To simulate the sound absorbing qualities of an audience, a blanket of superfine glass wool was crumpled over the auditorium area. An intermittent, ultrasonic note was emitted from the band shell and tested throughout the pavilion by a microphone on the end of a pole. The spread of sound, reverberation and echoes were checked in turn. In general, the tests proved the structure to have very satisfactory acoustics, but led to the design of curved surfaces for the sides of the bandshell to divert more sound to the far edges. Illinois Institute of Technology, 3300 S. Federal St., Chicago 16, Ill.

Decorative Fabrics

The designers of a new line of modern printed fabrics, the *Campagna Collection*, were chosen to represent various geographical areas of the U. S. in such fields as architecture, engineering, interior design and sculpture. These designers include: Paul Rand, graphic designer; Dr. A. J. Durelli, engineer; Jens Rison, furniture designer; Paul Thiry, architect; Elsie Krummeck, interior designer and sculptor; Serge Chermayeff, architect; Don Smith, designer; and Alvin Lustig, designer. All designs will be exclusive with the Campagna Collection. L. Anton Maix, Inc., 162 E. 59th St., New York, N. Y.

(*Continued on page 222*)

When You Design for Efficiency . . .



all of your experience, training and skill are put to use. You make every effort to avoid waste . . . in motion, in time, in the materials to be handled and utilized within your structure. You achieve this same efficiency in flow control when you specify KENNEDY Valves. Since 1877 they have been recognized by major valve users for their uniformly high quality, long life, and dependable performance. Write for the complete catalog.

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WORTHINGTON AIR CONDITIONING REPORT

WORTHINGTON PUMP AND MACHINERY CORPORATION
HARRISON, NEW JERSEY

Specialists in air conditioning
and refrigeration
for more than 50 years

We're Part of the HOSPITALITY at the Westward Ho

If ever the name of a hotel suggested an invigorating atmosphere, it's the spectacular Westward Ho in Phoenix.

Internationally famous as a resort hotel, the Westward Ho gives its guests the year-'round comfort of air conditioning, furnished by Worthington equipment.

Five years ago, when the hotel wished to expand its air conditioning, a Worthington centrifugal compressor was installed, with the original unit put aside for stand-by service.

Last year, an annex to the hotel was built, and Worthington equipment was again selected: two Freon reciprocating compressors and one condenser.

Distributor: Frank Harmonson Co., Phoenix.

Westward Ho is Phoenix' largest hotel. It is completely Worthington-conditioned.

La Mina Room, one of the several dining rooms in the Westward Ho.

Cool, comfortable air, Worthington-supplied, adds to the charm of this typical suite in the Westward Ho annex.

Two Worthington Freon-12 6HF4 Compressors installed in the new annex.

Now They Trade in Comfort on the New Orleans Exchange

New Orleans Cotton Exchange —completely air-conditioned by Worthington.

Consulting Engineers—Leo S. Weil and Walter B. Moses.

Contractor—Mayer Godchaux

During its nearly 80 years, The New Orleans Cotton Exchange has undoubtedly observed many scenes of feverish trading, but since 1948 the air, at least, has maintained a moderate temperature.

Worthington centrifugal refrigeration makes the difference. The Worthington system has a capacity to cool 420 gpm of water from 55.6 F to 46 F when supplied with 545 gpm of condensed water at a maximum of 87 F. Capacity rating for the entire system is 160 tons.

Worthington Makes a Hit in Sangamo's Auditorium

Auditorium in plant of Sangamo Electric Co., a leading manufacturer of electric measuring and control equipment, Springfield, Illinois.

The modern auditorium built by Sangamo Electric Corporation to be used as a meeting place for employee training courses, sales conferences, and employee organizations, provides the year-'round comfort of Worthington air conditioning.

The equipment, installed by Henson Robinson Co. of Springfield, Ill., includes a 3HF6 Freon-12 compressor, an AVY air conditioning unit, and an ECZ evaporative condenser. The system is rated at 15 tons and handles 4500 cfm. 95% of the condenser water is saved for re-use.

Here's how the system operates. A single off-on wall switch controls the entire system, with inter-locks for proper sequence of operation. A room-type cooling thermostat actuates a solenoid valve in the Freon liquid line. A heating thermostat actuates a modulating-type steam valve and modulating-type motor connected to air conditioning face and by-pass damper.

A manual modulating-type control and motor secure the desired mixture of fresh and recirculated air entering the unit (maximum 3000 cfm). Automatic change-over from heating to cooling cycle, or vice versa, is provided.

In order to prevent freezing of water in the evaporative condenser, located in the equipment room, a duct arrangement with temperature controller and damper motor was installed. This insures trouble-free operation when outside temperature falls below 35 F, since the evaporative condenser supply air is taken from the equipment room.

WORTHINGTON

AIR CONDITIONING AND REFRIGERATION

A complete line . . . in which *all* the vital components are *made*, not just assembled by Worthington. For more worth with Worthington, see your nearby Worthington distributor (consult Classified Telephone Directory).

PRODUCTS

(*Continued from page 220*)

Wall Covering

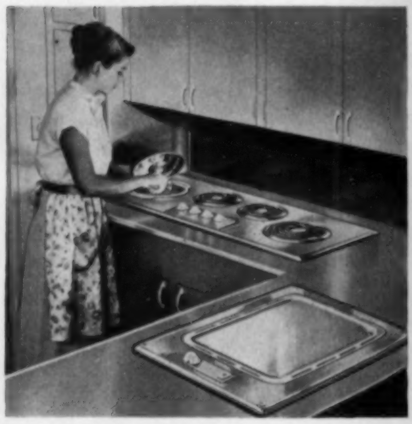
A new vinyl plastic wall covering, *Wonder Wall*, is reported to be flexible, smooth and easy to handle, and to be resistant to abrasion, wear, alcohol, alkali and stain. The material is available in eight colors, 10 pastel tints and two wood grains: Prima Vera in blonde, gray, tan, dark and mahogany; Walnut in blonde, dark and gray. Wonder Wall is said to be easily installed around inside or outside corners. Plastic Division of Pulpaper Co., 52 Vanderbilt Ave., New York 17, N. Y.

Plywood From Wood-Waste

Novopan three-ply panels made from wood waste are said to have many of the properties of plywood. The shavings from which panels are made reportedly give the product great strength and dimensional stability as well as pleasant appearance. Novopan is a composite board of three layers, two surface layers of wood shavings and the core of wood chips. These are impregnated with resin and finished in hot plate presses. Panels can be made in thicknesses from $5/16$ to 1¼ in. and in sizes of 4 by 8 ft or 6 by 12 ft. The material can be worked into curved shapes, can take nails and screws easily, and can be cut, sawed, sanded, planed and painted. Its use is indicated for furniture, panels, doors, as a flooring when faced with oak, and as an inexpensive core for thick plywood. United States Plywood Corp., Weldwood Bldg., 55 W. 44th St., New York 18, N. Y.

Built In Griddle

A new addition to the Thermador Bilt-In Electric Range line, the *Bilt-In Electric Griddle*, is designed to be mounted in existing counter tops as an auxiliary unit for cooking grilled foods.



Freedom in kitchen planning is permitted by built-in counter-top cooking units

The unit is set in a stainless steel frame 25 in. long by 17½ in. wide. The rough-in box is 23½ in. long, 16⅛ in. wide, 6½ in. deep. The grid itself is of thick aluminum, ribbed on the underside for even distribution of heat. Flush handles are provided on the grid to simplify removal for cleaning. A removable, recessed grease cup is set in one corner. Heat is provided by ceramic-insulated, nickle chrome wire coils. The switch is a reciprocal type with five heat positions. A neon type indicator light glows whenever the switch is turned on. The unit operates on 2,000 watts, 240 volts, a-c. Thermador Electrical Manufacturing Co., 5119 District Blvd., Los Angeles, Calif.

(*Continued on page 226*)

THE RIGHT COLOR

Architect and owner: Joseph Allen Stein, San Francisco

Architect: Irwin Jones, New York

Architect: Richard A. Morse, Tucson, Arizona

Cabot's House Paints (Gloss Collopakes) are available in a choice of 32 colors, many unique and obtainable from no other source. These colors have been carefully selected to meet the needs of modern domestic and industrial design. Many of our current standard colors were first manufactured on special order for architects, and therefore have been chosen by the architectural profession itself. Others have been matched to famous buildings or to characteristic regional colors . . . Williamsburg Blue, Moravian Gray.

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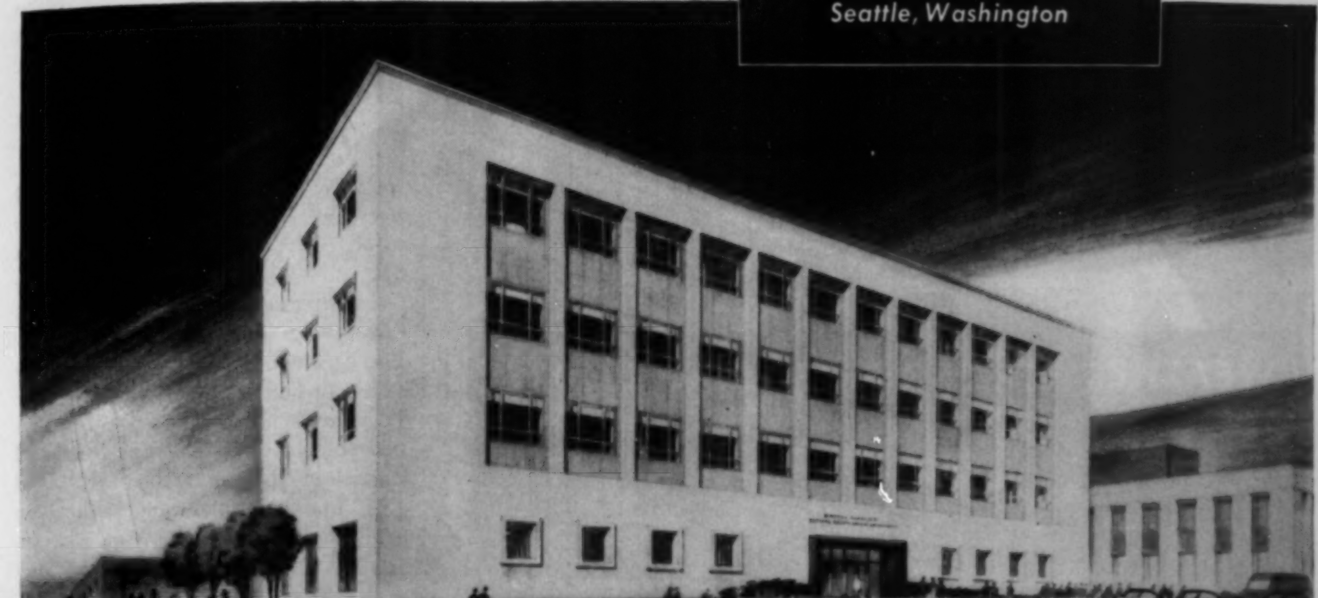

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add another reserve

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Q-Floors give this building a reserve of electrical adaptability sufficient for any number of years, decades or centuries. No matter how the electrical requirements may be complicated and increased, this building will meet the new demand in a matter of minutes and at virtually no cost.

The architects needed no fixed electrical layout; no rigid plan for partitions; no preset inserts. Q-Floors solved all the modern office electrical requirements.

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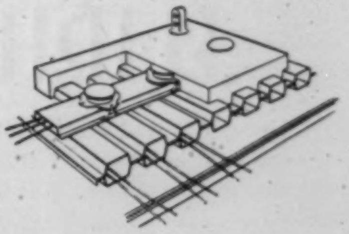

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PRODUCTS

(*Continued from page 226*)

Photographic Murals

Full color photographic reproductions for use as murals are available in a choice of four West Coast scenes, 3 ft-4 in. by 5 ft in size, at a very low cost. These *Foto Muralettes* are an addition to a line of wall-sized sepia or black and white photographic murals. The Muralettes are designed to be mounted directly to the wall like wall paper, or to panels of wallboard, plywood, etc., for temporary installation. Each comes equipped with an unpainted mitered frame. Foto Murals of California, 672 S. Lafayette Park Place, Los Angeles, Calif.

Another firm is offering sepia-toned photo murals, also at a low price, in three sizes: 2 ft by 3 ft-8 in.; 3 ft by 4 ft; and 3 ft-4 in. by 5 ft. The murals are available in a choice of 90 stock scenes from throughout the U. S., or from your own negative if it is 2¼ by 3¼ in. or larger of clear, reproducible quality. Each is printed on portrait paper and mounted on 5/16 in. wallboard, with wall fasteners, ready to hang. The surface is coated with varnish for protection. RCS Studios, 123 N. Wacker Drive, Chicago, Ill.

WEATHER STRIPS FOR SLIDING DOORS

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"Accurate" patented Metal Weather Stripping for sliding doors definitely answers every requirement. All over America, "Accurate" Sliding Door Weather Stripping is the recognized material to do this job *right.*

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215 EAST 26th STREET, NEW YORK 10, N. Y.

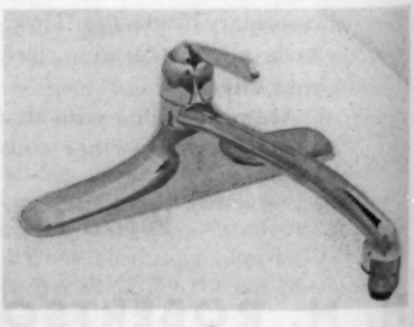
Steel Sun Shades

Auburn Window Visors are louvered steel awnings designed in stock sizes to fit single windows or windows in a row. A special aligning device is attached to the support arms to permit even line-up of units and close jointing. The louvered panels overlap slightly to admit air and light, keep out rain. The visors are bonderized and coated with a rust-proofing compound. Finish is baked enamel in green, red, blue or neutral gray. Matching door canopies are also available. Auburn Shank Co., Auburn, N. Y.

Sink and Lavatory Faucets

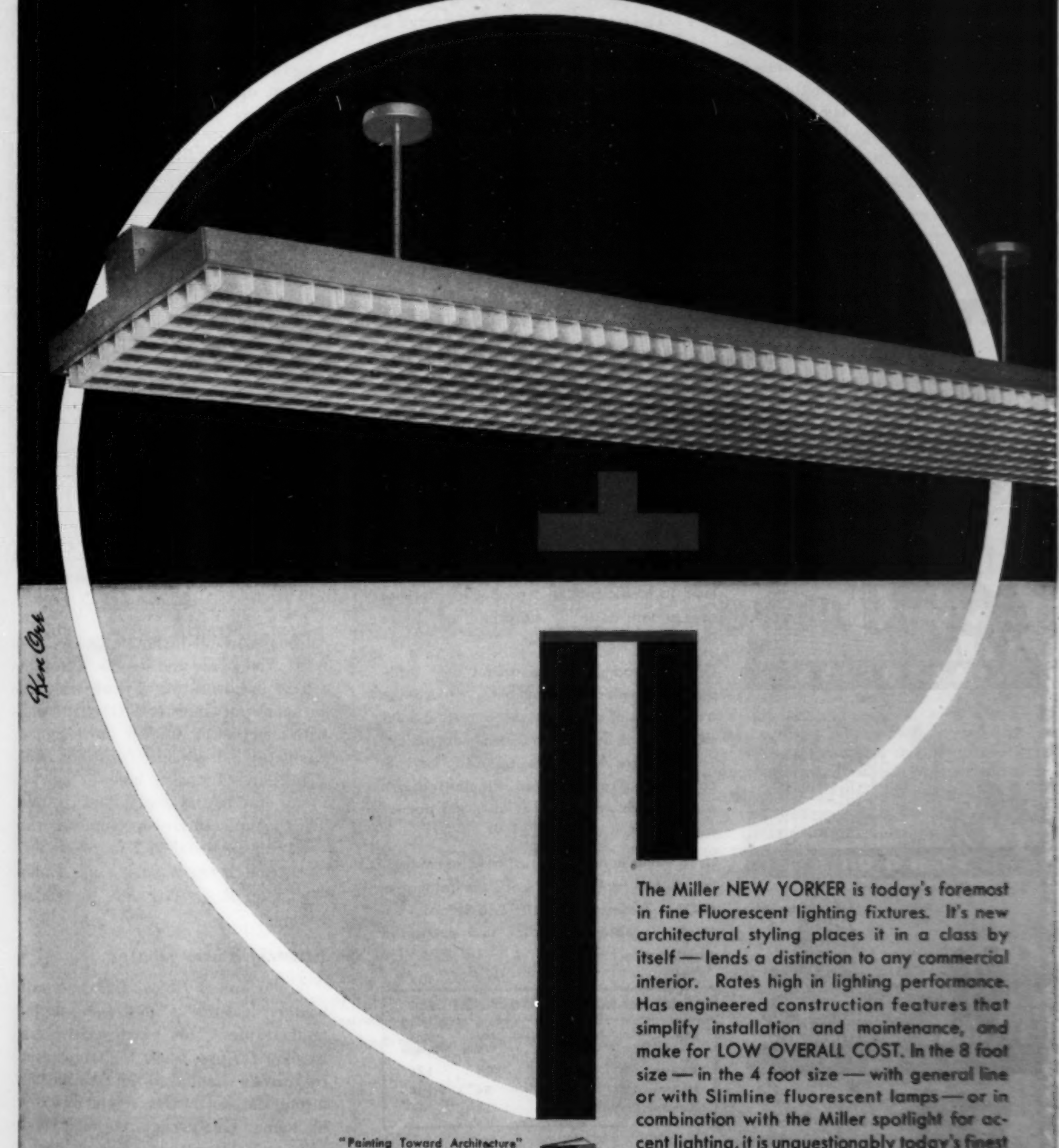
Moen Finger-Tip fixtures feature greatly simplified control operation. A single handle is moved to left or right for hot or cold water mixtures, and is lifted or depressed to turn water on or off. Water can be kept at a constant temperature throughout repeated operations. There are no screw threads or washers in the operating mechanism. All working parts are stainless steel. The faucets are supplied with a variety of spouts, ranging from 4 to 9 in. long. Each comes with an aerator to prevent splashing. All spouts are interchangeable and can be furnished with hose-bib connections. Special spouts are available for doctors' and dentists' needs. The faucets are made with either deck or wall type mountings. Ravenna Metal Products Corp., 6518 Ravenna Ave., Seattle, Wash.

New faucet control-lever is turned on or off a touch of the finger or elbow



(*Continued on page 230*)

Announcing the Miller NEW YORKER



The Miller NEW YORKER is today's foremost in fine Fluorescent lighting fixtures. It's new architectural styling places it in a class by itself — lends a distinction to any commercial interior. Rates high in lighting performance. Has engineered construction features that simplify installation and maintenance, and make for LOW OVERALL COST. In the 8 foot size — in the 4 foot size — with general line or with Slimline fluorescent lamps — or in combination with the Miller spotlight for accent lighting, it is unquestionably today's finest in fluorescent lighting. Write for the NEW YORKER catalog. Miller engineers and distributors are conveniently located to serve you.

"Painting Toward Architecture" — a book about The Miller Company's collection of abstract paintings related to architecture. Leading book stores have it.

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PRODUCTS

(*Continued from page 228*)

Tile Cement

Acorn Thinbed Tile Cement, a new product for setting clay and ceramic tile by the thin setting bed method, is a combination of mineral hardener and a liquid binder, packaged together and job-mixed to form a white waterproof cement. The product is said to crystallize rapidly, permitting quick completion of a job. The cement is further claimed to set hard in any depth, to fill in irregularities of the backing, and to compensate for unevenness of tile thickness.

The material is reported fireproof and not affected by cosmetics, ordinary drugs, food acids and hot utensils. The manufacturers also recommend the product for repairing cracks in concrete floors, stucco, etc. Acorn Adhesive & Supply Co., 1011 W. Eleventh St., Los Angeles 15, Calif.

THEY ALL NEED GLARE PROTECTION
available in Glare Reducing
COOLITE
GLASS
by MISSISSIPPI

FACTORIES

SCHOOLS

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Blinding sun rays that cause eye fatigue and lead to inefficiency and production declines are turned aside or absorbed by Glare Reducing COOLITE Glass.

Glare Reducing Coolite admits only softly diffused, comfortable daylight... reduces the transmission of solar heat radiation and lightens the load on air conditioning equipment. Temperatures inside are reduced, working conditions are improved. Eliminated are painted glass, makeshift shields and bothersome blinds.

Used either in new construction or in modernization and replacement work, the installation of Glare Reducing COOLITE Glass is an investment in greater production and decreased maintenance cost.

Specification Data—Glare Reducing COOLITE Glass

Pattern	Thickness	Max. Width	Max. Length
Hammered	1/8"	34"	132"
Hammered	1/4"	34"	144"
Hammered WIRE	1/4"	34"	144"

COOLITE

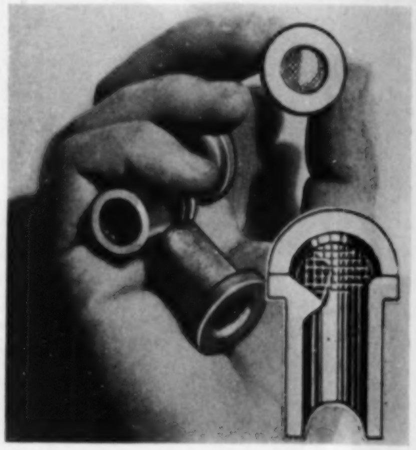
Send for new, informative catalog, "Coolite Heat Absorbing and Glare Reducing Glass."

For further data see Sweet's Architectural File or contact your nearby distributor of quality glass. Samples on request.

MISSISSIPPI Glass COMPANY
SAINT LOUIS 7, MO.
NEW YORK • CHICAGO • FULLERTON, CAL.
WORLD'S LARGEST MANUFACTURER OF ROLLED, FIGURED AND WIRED GLASS

Wall Vents For Condensation Control

A new item has been introduced to help combat moisture condensation caused by tight exterior walls that have no breathing qualities. The unit, called *Damp-Vent,* is basically a short, rustproof cast aluminum tube, 3/4 in. diam., flanged on one end. Rain blocks and screens are built in for protection from wind-driven rain and insects. The vents relieve condensation by allowing the exchange of moisture through walls without creating free-air movement or circulation. Installation requires only the drilling of a 3/4-in. hole through siding or stucco, and insertion of the unit. The manufacturers recommend that the vents be installed 2 in. above floor level, and between each stud. Damp-Vent Co., P. O. Box 203, Bettendorf, Iowa.

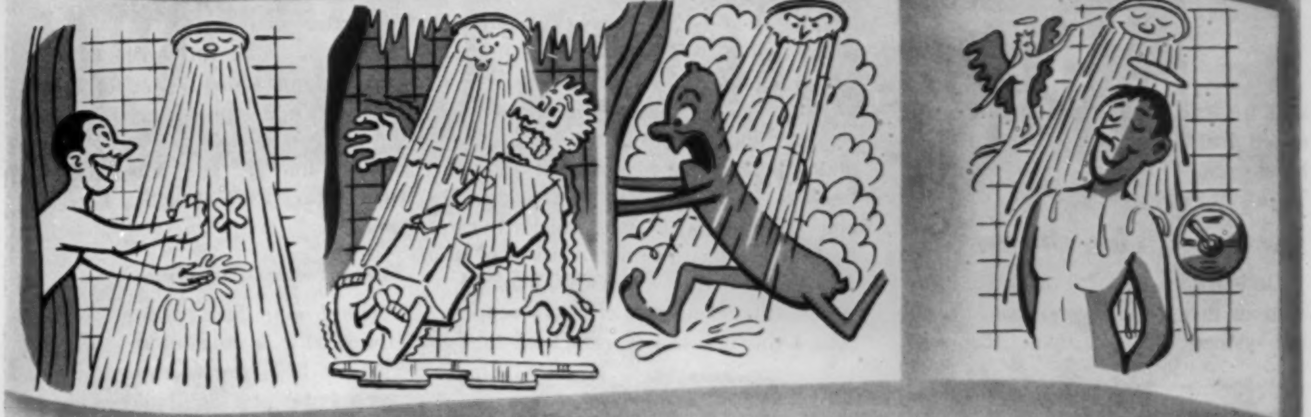


Small vents help rid exterior wall spaces of moisture and relieve condensation

Electric Water Heater

A new line of *Hotpoint* electric water heaters features a dial for selecting temperatures. This *Magic Dial* is said to allow the user to set the temperature by turning the dial to the position that meets the hot water requirements in his home. This permits personal choice of water temperature, and easy change with the presence of guests, for different seasons, or following the installation of new equipment. The dial has three colored settings marked vacation, average and extra hot. The water heaters are made in 30-, 40-, 52-, 66-, and 82-gal cylindrical models and in 30- and 40- gal table-top sizes. A square model

(*Continued on page 232*)



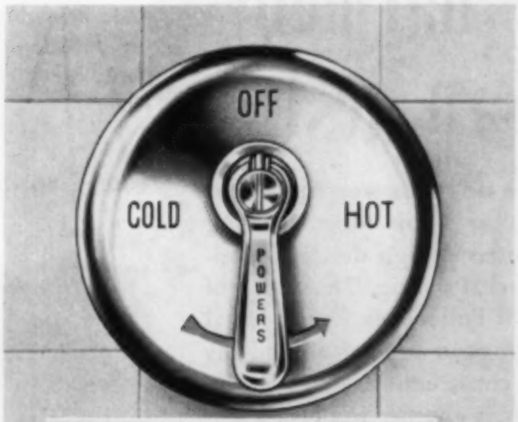
BANISH "Booby Trap Showers"

with the DOUBLE safety of

POWERS

THERMOSTATIC SHOWER MIXERS

Right: **Type H Mixer for Concealed Piping has 6" diameter dial. Mixer for exposed piping has 3¼" dial.**



ONLY ONE MOVING PART, easily accessible from the front. Minimum of maintenance, simple, rugged construction. Parts subject to wear have hard chromium finish.

Why be "Half-Safe" with mixers that only protect bathers from scalding caused by *pressure* changes? No mixer is really safe or non-scald that does not give *double* protection against both *pressure* and *temperature* changes in water supply lines... plus a *complete* shut off on cold water failure.

Regardless of (1) *temperature* or (2) *pressure* changes in water supply lines, a Powers thermostatic mixer holds the shower temperature constant. Failure of cold water instantly and *completely* shuts off the shower. Bathers can really relax and enjoy their showers.

MODERN SHOWERS require the safest shower regulator made . . . POWERS.

May we send Bulletin 358-H?

- **For new showers or when modernizing obsolete showers—play safe, use Powers Thermostatic Shower Mixers. Phone our nearest office or use coupon below. There's no obligation.**

Just ONE Accident may cost Many Times More than Powers Thermostatic Shower Mixers

The Powers Regulator Co.
2752 **Greenview Ave., Chicago 14, Ill.**

☐ Please send Bulletin 358-H and prices.
☐ Have an engineer call.

Name ________________

Title ________________

BTH Address ________________

PRODUCTS

(*Continued from page 230*)

with a capacity of 52 gal is being introduced for houses which do not have basements. Hotpoint, Inc., 5600 W. Taylor St., Chicago 44, Ill.

Hot Water Heating Boiler

Designed for use with radiant heating systems in small homes, or zoned heating systems in larger homes, the *Hotstream Model H-193* automatic gas-fired hot water heating boiler can be adapted to all types of gravity or forced circulation installations requiring up to 346 sq ft of radiation.

The boiler is claimed to be low-cost, compact and efficient in operation. The unit is housed in a welded steel cabinet finished in baked gray or white enamel, and insulated with metal-shielded asbestos. The heating unit consists of a raised port burner with twin air mixer. The heating element is of heavy copper coils. Other accessories include an automatic pilot, gas-pressure regulator, temperature limit control, and automatic gas-control valve.

The same unit can also be used as a large volume water heater for residential, commercial or industrial hot water supply. Models are available for both natural and LP gas. The Hotstream Heater Co., 2363 69th St., Cleveland, Ohio.

Steel Access Panels

The *Knapp Steel Access Panels* are fabricated in a range of 16 sizes, up to 24⅜ by 36⅜ in., to meet varied requirements of the building trades. Special sizes are made to order. The doors are made of galvanized steel, with extra reinforcement and a wide plaster flange. It is finished with a baked-on prime coat of special paint. Captive screw pivots permit doors to open to 102 deg. Doors may be removed by raising pivots in saddles. A special device is said to assure positive locking and closing action. Adjustable anchors are furnished when specified. Knapp Bros. Manufacturing Co., Rossmoyne, Ohio.

Undercounter Dishwasher

Drawer-type dishwasher is designed for use with custom-built kitchen cabinets

The *Westinghouse* undercounter dishwasher is designed to be built into new buildings or slid under existing work surfaces. The unit is front opening, and top-loading, slides out like a drawer. Installation is claimed to be simple and inexpensive since existing drain plumbings can be used in almost every case.

(*Continued on page 234*)

Follansbee Seamless Terne Metal Roofing

—for harmony in modern design

In modern housing the versatility of Follansbee Seamless Terne Metal Roofing permits harmonious design detail to conform to architectural styling. That's one of the advantages of Follansbee Terne Metal Roofing—it belongs in any period and any specialized roof construction.

Color harmony is another important feature of a Follansbee Terne Metal Roof. Your client can select any trim color and the roof can be finished in contrasting shade, or in the same shade. This permits change of color scheme, anytime—just the sort of flexibility you like to suggest to a client.

Then, when you point out that terne metal roofs are lifetime roofs, in addition to being harmonious in color and design, you can specify Follansbee Terne Metal Roofing with assurance of satisfaction.

If you haven't received your file of architectural details be sure to write Terne Metal Dept. A., Follansbee Steel Corporation.

FOLLANSBEE STEEL CORPORATION

GENERAL OFFICES, PITTSBURGH 30, PA.

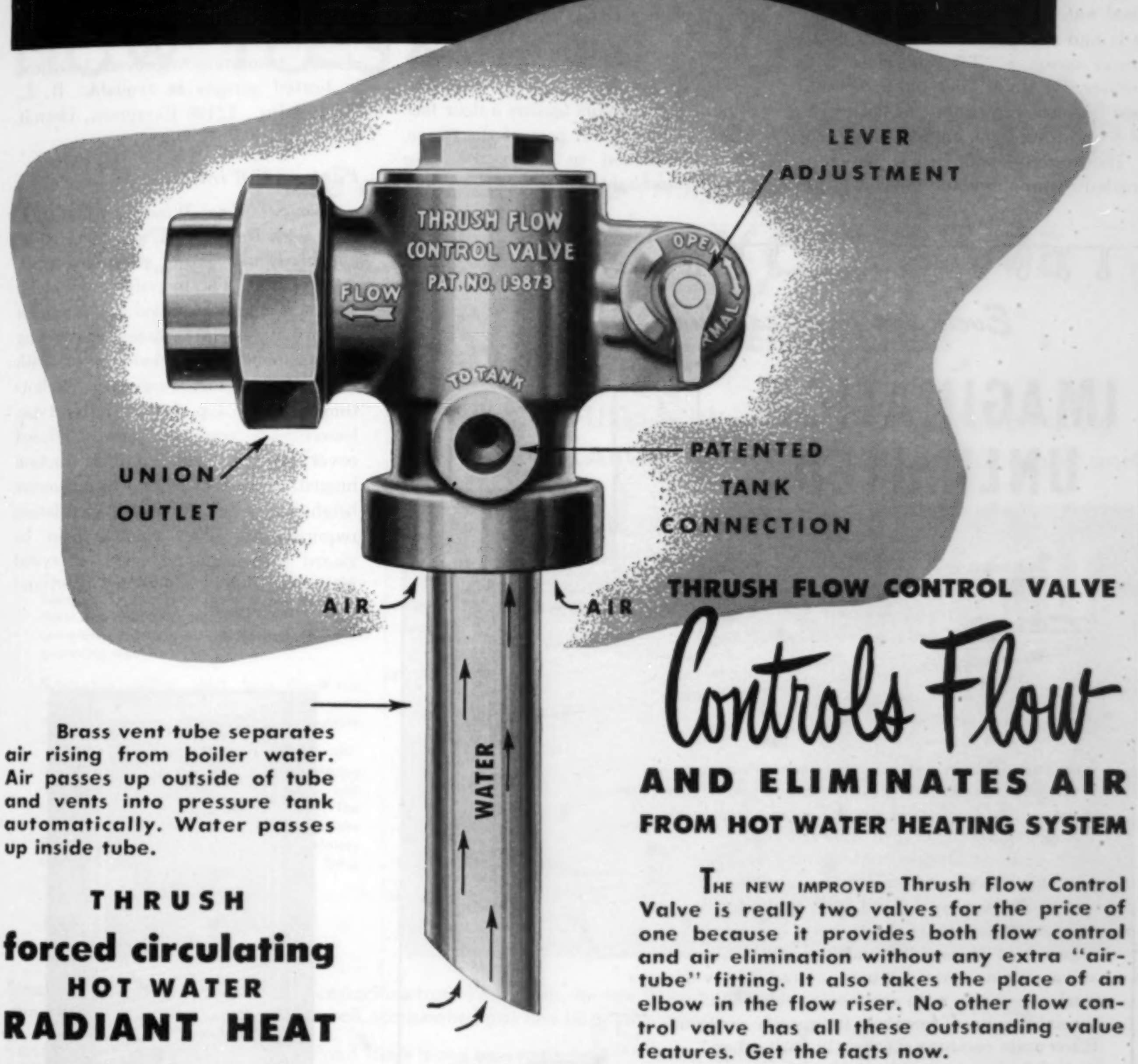
COLD ROLLED STRIP • ELECTRICAL SHEETS • POLISHED BLUE SHEETS • SEAMLESS TERNE ROLL ROOFING

Sales Offices—New York, Philadelphia, Rochester, Cleveland, Detroit, Milwaukee. *Sales Agents*—Chicago, Indianapolis, St. Louis, Kansas City, Nashville, Houston, Los Angeles, San Francisco, Seattle; Toronto and Montreal, Canada. *Plants*—Follansbee, W. Va.

FOLLANSBEE METAL WAREHOUSES

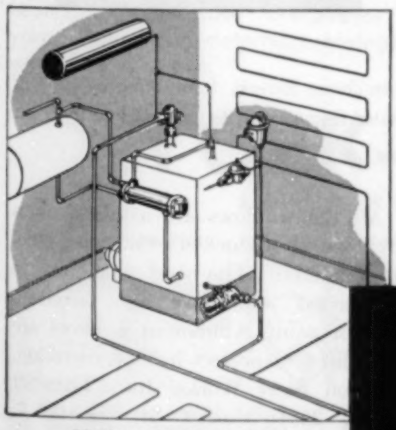
Pittsburgh, Pa. • Rochester, N.Y. • Fairfield, Conn.

Two Valves In One!



Brass vent tube separates air rising from boiler water. Air passes up outside of tube and vents into pressure tank automatically. Water passes up inside tube.

THRUSH
forced circulating
HOT WATER
RADIANT HEAT



COMPLETE CONTROL FOR AUTOMATIC HOT WATER HEAT

THRUSH FLOW CONTROL VALVE

Controls Flow

AND ELIMINATES AIR

FROM HOT WATER HEATING SYSTEM

THE NEW IMPROVED Thrush Flow Control Valve is really two valves for the price of one because it provides both flow control and air elimination without any extra "air-tube" fitting. It also takes the place of an elbow in the flow riser. No other flow control valve has all these outstanding value features. Get the facts now.

Highest boiler temperature occurs when the Flow Control Valve is closed. Air and gases which are liberated as the water is heated, vent directly into the pressure tank. Water which passes into the flow main, is always free of air. Result—greater heating efficiency—more uniform heat. You save material cost, save installation time, and reduce inventory requirements by specifying Thrush "T" Flow Control Valves. (They are also available without tube.) For more information, see our catalog in Sweet's or address Dept. J-5.

H. A. THRUSH AND COMPANY

PERU, INDIANA

MANUFACTURER OF HOT WATER HEATING EQUIPMENT FOR MORE THAN A QUARTER CENTURY

PRODUCTS

(*Continued from page 232*)

The dishwasher has no drain valve. Used water is pumped up to the drain. It is said that all the unit needs is the proper space, a "T" connection with existing hot water line, and a new tail pipe (furnished by the manufacturer) to be added to the sink outlet.

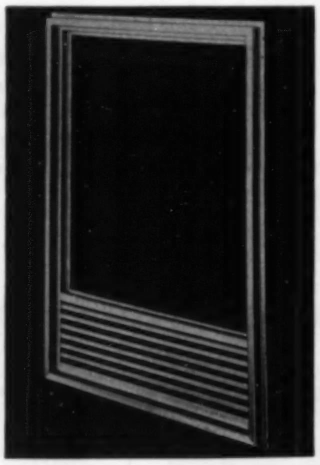
The washing and rinsing action is created by an aluminum impeller blade and a diverter mounted above it. A heating element is used to speed drying of dishes. The dishwasher is also available in a free standing 24-in. cabinet model, and in combination with a 48-in. electric sink. Westinghouse Electric Appliance Div., Mansfield, Ohio.

Aluminum Garage Doors

The *Taylor-Made Knock-Down* aluminum garage doors feature a door face which is an integral part of the frame. This is claimed to make the door stronger and lighter in weight. The door has horizontal sections which come demounted. Shipping size is 28 by 96 by 5 in. It is said to be easily assembled by bolts and nuts through pre-drilled holes. The doors are of the receding type, made for either 8 ft by 7 ft, or 9 ft by 7 ft openings. Two lock catches are provided on either side of door for tight closure. Insulation to prevent heat loss in heated garages is available. R. L. Taylor, Inc., 12480 Evergreen, Detroit 28, Mich.

Packaged Windows

Trim-Set Metal Windows come complete with frame, sash, sill, trim, glass, and hardware, factory assembled as an integral unit. The manufacturers claim that it is simply installed in a 5 minute operation. They are available as awning or casement type windows, or with fixed glass and metal louvers at the bottom, sides or top. In the latter type, louvers are equipped with a glazed cover on the inside, bottom friction hinged, and a bronze fly screen. Louver heights may be had to suit ventilation requirements. The windows can be glazed with insulated, plate or crystal glass. Ventilators can be insulated and weather-stripped.



Ventilation louvers form integral part of metal frame in package window unit

All the windows are available in a great range of stock sizes in either steel or aluminum. The steel windows are bonderized and have one baked-on coat of paint. Aluminum windows are alumilited to protect against corrosion. Fentron Steel Works, Inc., Trim-Set Corp., 2801 Market St., Seattle 7, Wash.

(*Continued on page 236*)

Even for limited budgets - - -

IMAGINATION UNLIMITED

USED CARS MOTOR CENTER
Food Mart
ARENA

Your imagination has free reign when you develop a building design around Rilco Arches and Trusses. These sturdy glued-laminated wood framing members are engineered for rugged strength and swift, economical construction. But more than that, they give your building an inherent architectural integrity and style that's fresh and exciting.

Standard Rilco Arch and Truss designs cover a wide and satisfying variety of uses . . . and Rilco engineers work constantly with architects to develop special structural members for specific projects. Rilco units combine excellently with other materials . . . they come to the job site ready to put up . . . and often when left exposed inside, their handsome wood tones make a striking interior feature.

The sketches shown here illustrate just a few of many possible adaptations of Rilco Arches and Trusses. If you want more information see our 12-page catalog in Sweet's or drop us a line.

RILCO WORKS WONDERS WITH WOOD

Laminated **PRODUCTS, INC.**

1670 First National Bank Building • Saint Paul 1, Minnesota

HOW TO SAVE $20,000

ON AN $11,000 INVESTMENT

HOW TO SAVE $4,000

ON A $7,500 INVESTMENT

These are actual Case History Savings

HOW MUCH CAN YOU SAVE

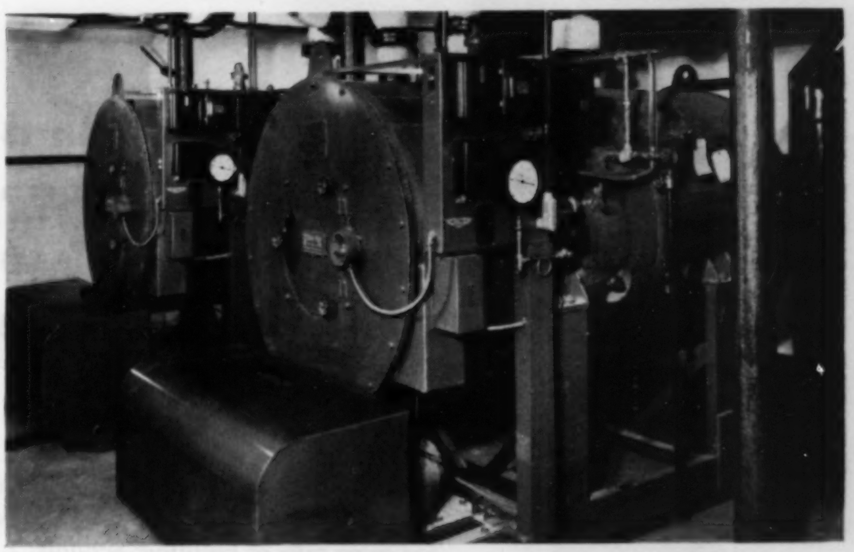
BY INSTALLING A STEAM-PAK YORK POWER GENERATOR

SAVE ON FUEL—with oil, gas or combination firing
SAVE ON LABOR—with a completely automatic unit

Steam-Pak Generators, similar to the one illustrated at the right have incorporated in them many exclusive features which produce automatic and highly efficient operation in producing steam.

Substantial savings result from Steam-Pak efficient 3-pass boiler construction, automatic operation with varying loads, rapid steam production and many others including . . .

IRIS SHUTTER, the patented precise metering device which produces an even flame with practically perfect control of burner air. The correct volume of air is metered to match the firing rate. Air-oil adjustment is accurately synchronized through the entire burner firing range.



Steam-Pak Generators are built in capacities from 15 H.P. up, for low or high pressure steam or hot water, for light or heavy oil, combination gas and oil or straight gas.

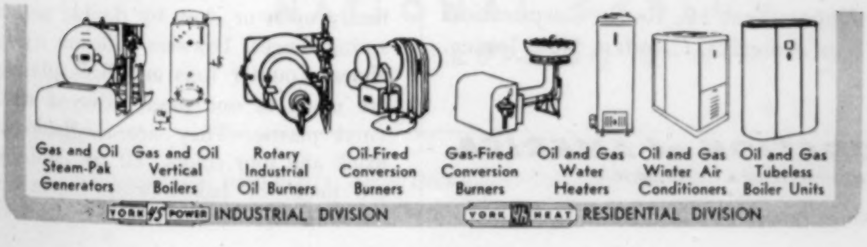
Can you save money with a Steam-Pak? There is one way to find out . . . ask a qualified heating Engineer. Your York-Shipley Distributors are thoroughly qualified to analyze your problem and determine savings. See your nearest York-Shipley Distributor, or write, wire or 'phone.

STEAM-PAK JOB STUDY
21

YORK-SHIPLEY

INDUSTRIAL DIVISION

519 Jessop Place York, Pennsylvania 'Phone 7861


Gas and Oil Steam-Pak Generators
Gas and Oil Vertical Boilers
Rotary Industrial Oil Burners
Oil-Fired Conversion Burners
Gas-Fired Conversion Burners
Oil and Gas Water Heaters
Oil and Gas Winter Air Conditioners
Oil and Gas Tubeless Boiler Units
YORK POWER INDUSTRIAL DIVISION
YORK HEAT RESIDENTIAL DIVISION

Write for Case Histories on how others save money

PRODUCTS

(*Continued from page 234*)

Patterned Asbestos Board

The Flexboard line of utility sheet materials made of asbestos and cement has been augmented by a decorative panel, called *De Luxe Flexboard.* The new sheet is made ⅛ in. thick, 4 ft wide and up to 8 ft long. It features a linen-like fabric pattern and is available in six colors. This finish is said to be fused into the base sheet through the use of heat and pressure, to be hard and smooth to the touch, and not to peel or blister. It is also claimed to be alcohol and grease proof, and highly resistant to acids, alkalines, household chemicals, burning cigarettes. The board may be applied by adhesives or mechanical fastenings and can be worked with ordinary tools. Johns-Manville, 22 E. 40th St., New York 16, N. Y.

Recessed Lighting Fixtures

Greatly reduced cost of installation is claimed for the new Kirlin recessed incandescent fixtures. It is stated that the minimum 4 ft of asbestos wire called for by many codes is not required, the design permitting rubber covered wire to be run directly to the fixture. An insulated junction box on the side of the fixture is said to keep the heat below 60 C limit for rubber covered wire. Need for carpenter work is reportedly eliminated by mounting ears on the boxes and the use of bar hangers which simply staple to the joists. The lack of roughing-in work would make it simple for the electricians to mount the fixtures.

Built-in support bars simplify installation of new recessed lighting fixtures

The recessed fixtures are made in a range of sizes, square or rectangular, and also for fluorescent lighting. All use aluminum reflectors and have spread-type or concentrating lens set in hinged doors. The Kirlin Co., 3435 E. Jefferson Ave., Detroit 7, Mich.

Kitchen Equipment

American Central line of steel kitchen units, designed by Raymond Loewy, features clean lines and the elimination of projecting handles or ornamentation on wall cabinets and base cabinet drawers. The line includes eight different sinks; 30-in.-high base cabinets in widths from 15 to 36 in.; and wall cabinets, 18 in. high, in widths ranging from 18 to 36 in. All doors are held firmly open or shut by double action spring hinges. Drawers slide on nylon glides. Counter tops and backsplashes are made in one piece, covered with vinyl plastic. They are available in black and four colors. All the cabinets are made of baked white enameled

(*Continued on page 238*)

THIS MAN IS PAID TO HELP ARCHITECTS AND THEIR ENGINEERS!

He is a specialist in planning and engineering RCA Sound Systems for every type of building: Schools . . . Hospitals . . . Hotels . . . Factories and Offices . . . Churches . . . Department Stores . . . Airports and Terminals . . . Warehouses and Garages . . . Auditoriums . . . Recreational Centers . . . Institutions . . . Stadiums . . .

No matter what size or type of job you have on your drawing boards, you can get practical help from RCA in fitting RCA Sound Systems to your architectural plans. No obligation, of course.

Contact your nearest RCA Sound System distributor or write: Sound Products, Department 3E, Radio Corporation of America, Camden, New Jersey.

RCA

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ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.

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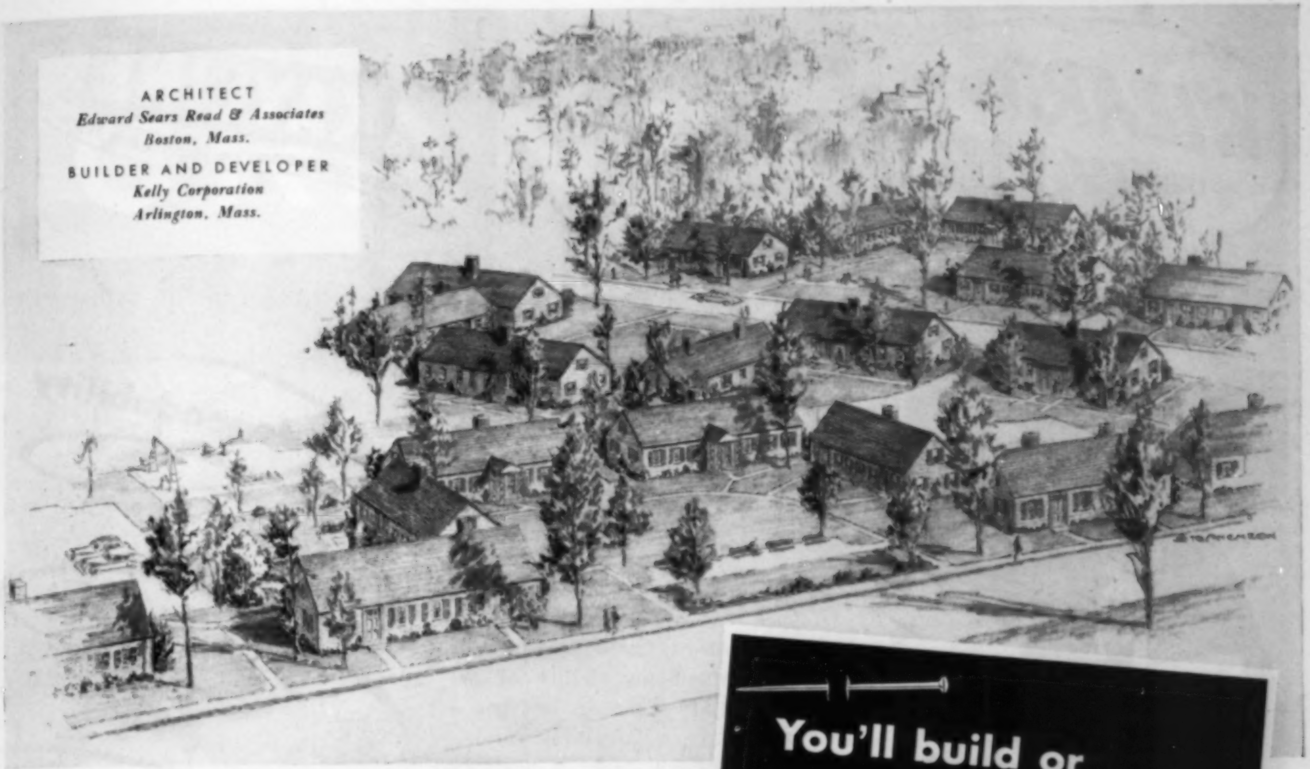

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"HIRAMAR" Hyannis, Mass.

You'll build or remodel better with Gold Bond

They pinned the responsibility on us!

YES, the architect and builder on this big 120 unit Hiramar job solved one big problem right away. They pinned responsibility for performance of materials on National Gypsum by using Gold Bond Building Products all the way—Gold Bond Rock Wool Insulation, Gypsum Sheathing, Gypsum Wallboard and perforated Tape Joint System and Gold Bond Sunflex Paint.

You get two big advantages when you specify Gold Bond *exclusively* on your jobs. First, you know you're getting products that are specifically engineered to work together. Second, you avoid divided responsibility when the performance of *all the materials* is guaranteed by *one reliable Manufacturer*—National Gypsum Company. So on all your jobs from now on, whether residential or commercial, specify and use Gold Bond products all the way. They're all fully described in Sweet's.

NATIONAL GYPSUM COMPANY
BUFFALO 2, NEW YORK

Fireproof Wallboards, decorative Insulation Boards, Lath, Plaster, Lime, Sheathing, Wall Paint, Rock Wool Insulation, Metal Lath and Sound Control Products.

WIZARDS WITH WOOD

FIRZITE

—tames wild grain and checking on fir plywood

Wild grain and checking are just about the only troubles in using fir plywood. The one sure way to insure a perfect finish is to start with FIRZITE. It tight-seals the pores, virtually prevents grain rise and checking, readies the surface satin-smooth for paint, stain, enamel. (For blond, pickled, wiped or tinted effects on any wood, use White Firzite.)

SATINLAC

—newer than shellac or varnish . . . and better!

For "natural wood" finishes on paneling, there's nothing like Satinlac. Brings out and preserves the natural grain and color beauty of any plywood or solid wood. Avoids that "built-up" look yet gives full protection; and will not turn yellow or darken with age. "Water-white", easy to brush or spray, dries ready for next coat in 3 or 4 hours.

Write for suggested specifications.

UNITED STATES PLYWOOD CORPORATION
Dept. 56, 55 W. 44th St., New York 18

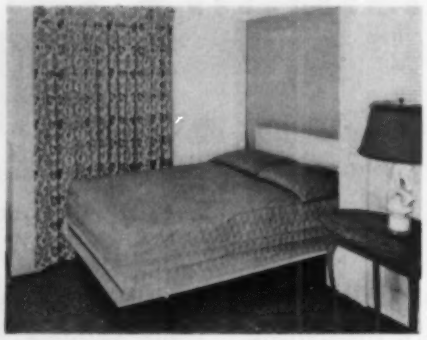
PRODUCTS

(*Continued from page 236*)

steel. In addition to the basic units, many accessories are included in the line, such as built-in lights under wall cabinets, and special corner utility bins. American Central Div., Avco Manufacturing Corp., Connersville, Ind.

Disappearing Beds

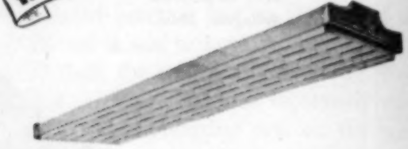
Holmes "Modernized" disappearing beds are claimed to be designed for concealment without any sacrifice of bed comfort or utility. There are 10 types of beds in the line, designed to fit varying sized closets. Each model is made in single, twin and double bed sizes, and use full-length standard mattresses. The beds are simple and low in design, and have no footboards. Headboards come in light or dark finished hardwood, and fold with a full width piano hinge to hold pillows in place. The chassis is welded steel tubing. Concealed folding legs operate automatically and are said to rest firmly on floor when bed is lowered. Raising, lowering and swinging mechanisms employ ball bearing pivots and spring balances. Mountings are available for side door jambs, doors, recesses, drop panels and pivot panels. Holmes Manufacturing Co., 211 N. Madison Ave., Los Angeles 4, Calif.



Space-saving concealed beds feature balanced, easy operation and simple lines

(*Continued on page 240*)

KAYLINE
the one source lighting line



for dependability and price

Kayline calls your attention to the most important fluorescent development in many years! Kayline fixtures are now available to take the new 4-foot single pin slimline lamps.

Yes! You can now specify the economical, new 4-foot slimline in *any* Kayline fixture. It lights at the flick of the switch, and it's easy to handle . . . just push-pull and its single pin locks the lamp in or out of the socket.

Write for complete price information!

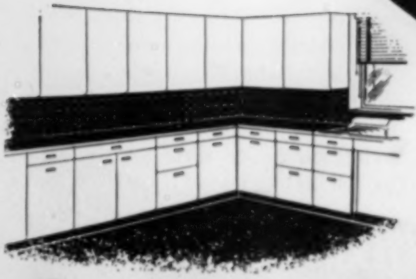
Listed in Sweet's Architectural File for 1950, Sec. 31A-12

KAYLINE
the one source lighting line

THE KAYLINE CO.
2480 East 22nd St.
Cleveland, Ohio

CRANE

the preferred plumbing



The Crane *Sunnyday* Sink . . . porcelain enameled cast iron . . . in white and eight Crane colors. Single basin, double drainboard. 54″ or 60″. Also available, a complete line ranging from 36″ to 72″, all with Crane *Dial-ese* controls. Complete selection of matching wall and base cabinets. Consult your Crane Branch or Crane Wholesaler.

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